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Inspection of Medical Schools and Survey of Medical Education

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A periodical physical examination is now in order for the American medical school. As physicians, we all believe in looking people over very thoroughly at stated periods to apply preventive measures, control pathologic processes, and advise the proper hygiene. In such an examination we endeavor to make a searching study of the whole body, its organs and systems, to ascertain whether there are deviations from the normal. We have learned, also, to pay careful attention to the mental reactions of the patient to his own physical condition and to his environment.

A generation ago, we scrapped the commercial medical school, and have built up a remarkable series of well distributed national medical schools, many of them associated directly with our great universities. Here, at this meeting of the Association of American Medical Colleges, we have brought together the official representatives of these institutions. Through this Association, the Council on Medical Education, the Federation of State Medical Boards, and other forces, there has been a steady effort to increase the general quality of medical instruction and to improve the tone of our medical institutions associated in any way with instruction.

There is no doubt that great and substantial achievements have been made. Large sums of money have been secured, beautiful buildings erected, strong faculties employed, and medical students carefully selectd on the basis of adequate preparation. These students have been given a sound training, and those who did inferior work have been eliminated. Unfortunately, the progress has not been uniform in the different institutions or in all parts of the United States. Some institutions have been much more fortunate than others in securing funds. Some were chosen by benefactors for large gifts so that they might stand out as examples. Some of these institutions had too much money, and have developed too elaborate buildings and have involved themselves in such large expenses that with the shift

in the economic position of the country they are in sharp financial difficulties.

The old medical school, with all its defects and deficiencies, had in it the inherent quality of loyalty. A group of men cooperated in rendering service, much of it absolutely free, for the benefit of the sick and for the training of the medical schools by the universities, there was a distinct tendency toward crystallization. The trend was to become institutionalized and departmentalized. In many ways the faculties have lain down on the general job of developing medicine and advancing the whole medical school. Devoted to their own fields, and often secure with a salary, they have lost some of those qualities of crusading for the "old school" that gave vitality to the so-called commercial schools and revolutionized our medical setup in the course of a decade.

The general effect has been to leave the development and advances to a few administrative officers, rather than for a group of physicians to take a militant part in the constructive side of the building up of these organizations.

There has been a definite weakening in the fibre of certain of our institutions. A re-inspection and study of them will be somewhat painful; but it is absolutely necessary in order that no American boy or girl who proposes to go through the long struggle of studying medicine will be misled into putting in his or her time in an inferior institution. We have become somewhat too complacent. Institutions recognized by the Council on Medical Education and Hospitals as belonging to the A group have sometimes relaxed after they have achieved such classification. In a number of instances there has been serious debate in the Council on Medical Education as to whether this A rating should or should not be withdrawn.

We have been judging the medical institutions of this country by their physical plants, their budgets, the preparation of their teachers, their hospital relationships and many other factors. The real test is the quality of the graduate and whether he can fit into the active life of the profession and hold up his end of the work to be done.

There is a definite tendency to limit the number of students of medicine in the United States. There is a question whether so many medical schools are required for the instruction of physicians for a people whose disease rate has been markedly reduced by public health measures and preventive medicine in general. While it is true that if medical care is given in adequate volume to all of our people a large increase of medical students would be necessary, we do not have at present a social system or a financial setup or distribution of understanding that indicate a marked increase in the call for medical service in the decade or so just ahead.

In 1909, when the problems of medical education were acute and there was the keenest interest in general improvement, a committee made up of one hundred leading educators in the United States and Canada, with many others acting in an auxiliary capacity, presented a long report on a model medical curriculum. This report has had a profound influence on the development of the medical school, the medical curriculum, and the laws regulating the practice of medicine and surgery in the different states. Through the efforts of Dr. Bevan and Dr. Colwell and the other members of the Council on Medical Education the recommendations of these educators were developed and used in practical procedures for the benefit of the various medical schools and in working up programs of study and inspection.

While there has been a very considerable amount of argument over details, there has been a rather uniformly steady improvement in medical education, the application of medical practice acts, and in the quality of medical services rendered throughout the country. I need not emphasize the results of the over-rigid curriculum or the splendid efforts of this Association to give freedom and initiative within certain limits to the individual medical school. The pressure of numbers has made it comparatively easy to hold up high standards for admission to the medical school itself. The same pressure of numbers within the medical school has made it possible to keep the standards of achievement high.

Of late we are beginning to discover a slowing down in some of our various medical schools. We can hardly speak of what we note as "signs of senility." They seem to be more the result of bad habits and unfortunate procedures than of age itself. In general, our difficulty is an overdose of self-satisfaction, together with too much complacency as to the future.

It is quite evident that there are basic requirements for admission to the medical school and for necessary instruction in the school itself. Beyond those basic requirements there can be a considerable range of choice as to how the time of the student should be employed. In other words, there must be rigidity to the structure. The question is, how extensive shall this rigidity be, and how far up should it go? We must have that elasticity for which the Association stood begin at some point and be an ever-present part of the activity of the institution.

Consequently, the re-inspection and re-study of medical education which is now proposed, and which will be carried down to details, must not have rigid standards set up which will destroy individual opportunity, initiative and those wholesome differences that should exist between our medical schools. We must make a distinction between a defect and a weakness which requires some emphasis for its correction. We realize that in these

troublesome times it is a struggle for the medical schools to go forward with their programs; but, even so, it becomes more important than before to know what is essential that is not being done, and what is non-essential that is being done, in all of our institutions. I have no doubt that some of our strongest schools may feel that such an inspection and study is unnecessary; but, regardless of the institution concerned, it may be very important to others in trying to move ahead to find out whether it is worth while to emulate certain lines of work adopted in our most famous medical schools.

There is a constant tendency in education to add—and subtraction takes place only with pain and under adverse conditions. We have built up the medical curriculum and medical faculty by a process of addition and accretion. We must now solidify and justify both our faculty and our curriculum by analysis and comparison.

We think that a complete re-study will be helpful in giving emphasis to mental hygiene, psychiatry, public health, public therapy, and the social and economic aspects of medicine. Psychiatry, public health and the social aspects of medicine have become just as essential in the life of the doctor of today as the training in the classification of the white blood corpuscles. It is evident that a study will make it easier to push into the graduate school the over-emphasis on the specialties that has taken place in many institutions due to various causes, particularly the outstanding ability and personality of the heads of these special departments. We trust that some of the medical schools can use this inspection to gain local and other support in the development of libraries, laboratories, hospital services, and so on.

In other words, there are great advances which have been given to medical education from the careful inspections of medical schools and the studies made of medical education. We can again obtain those advances by such a re-study at the present time. With the information gathered on the ground we shall be in a much better position to understand what is to be done; for instance, in the limitation of the size of student groups to the size of existing plants. We can handle better the problem of the invasion of foreign medical students either as undergraduates or as physicians, and can meet a thousand and one other problems which can be handled only through knowing the facts.

There is, too, a marked inequality in the cost per student in different medical schools. This is not objectionable in itself unless it means needless waste on the one hand or inadequate facilities on the other.

We have to keep a proper relationship between medical education, the needs of the public, and the financial possibilities of the student. If we limit overmuch the size of our student bodies, if we prolong the required

courses of study, we open the way to those with inferior training to take over much of the care of our fellow citizens who are not apt to be discriminating at all times in the choice of those who care for their ills.

There are certain human elements in groups of men. If they have what we call "the spirit," a few gifted teachers can do more than all the fancy buildings and elaborate combinations of clinical opportunities to make men and women good doctors.

This study of our schools should be complete, thorough and accurate; but it should weigh all elements and see each school in its own setting. Comparisons may be quite unfair. Results count.

Above all, the situation demands that the study and analysis made be in harmony with the needs of the physician ten years ahead. We must try to previsage what he will be expected to do and should do, and plan our medical teaching to prepare him for it.

DISCUSSION

DR. THOMAS ORDWAY (Albany Medical College): I wish to emphasize one point which Dr. Wilbur mentioned, a point which is well known to the other members of the survey committee but, perhaps, is not so well known to members of the Association at large.

We are now faced with a problem which in some respects is like that which was met in the five year period 1905 to 1910 before the Flexner report was published. At that time the number of students graduated from the all too many medical schools was increasing faster than the population increase required. Then the problem of the number of poorly trained medical students was met by elevating the requirements of medical education that many, about 50 per cent, of the medical schools closed, merged or reorganized. The best of the schools remaining, for the most part, strictly limited the number of students admitted. The fees from students did not pay more than a small per cent of the cost of operation, and endowment became essential. Schools which could not meet the educational and financial requirements closed.

Today many medical schools are admitting larger classes. The result is again overcrowding of students and overproduction of doctors. A glance at the following figures is of interest. These figures were taken from reports of the Council on Medical Education. Ten years ago the total number of students in the American medical schools was 17,728. In 1933 it increased to 22,799. The total number of graduates ten years ago was 3,562; last year, 5,038. In other words, the total number of students in the schools increased 28.5 per cent in ten years, the total admissions 25 per cent, and the total number of graduates 41 per cent.

I will not burden you with the details of these tabulations but, briefly divided, the admissions fall into three groups and the graduates into three groups. These groups did not include schools recently started or recently reorganized. In group

1, colleges whose admissions have increased 100 per cent or more in the last ten years, there are six such schools. Group 2 consists of colleges whose admissions have increased less than 100 per cent and more than 50 per cent in the last ten years. The number of these is thirteen. Group 3 consists of colleges whose admissions have increased less than 50 per cent but more than 10 per cent. The number of these is 25.

The colleges whose admissions have remained approximately stationary during the same period number 21.

In four colleges only have the number of medical students admitted decreased. Four new schools have been started since this period, and one is entirely reorganized, essentially a new school.

This same general increase applies to graduates as it does to admissions.

With very few exceptions it is not the best medical schools that have increased the number of students admitted. The increase in the number of medical students admitted has been, at least in part, due either to a decided lack of pressure resistance in the large number of applicants, or to a reduction in income from endowment or other funds.

It appears again that many medical schools are accepting larger numbers chiefly for the students' fees. Notwithstanding the generally improved facilities of the medical schools, such large numbers will surely lead to an inferior quality of medical education. Furthermore, segregation of these larger numbers of physicians, chiefly in large cities, does not tend to solve the problem of satisfactory distribution of medical care, although economic pressure may drive a certain per cent of these doctors to practice, at least temporarily, in rural areas. Moreover, a great oversupply of physicians is likely to lead to sharp medical practice.

Dr. William Pepper (University of Pennsylvania): I represent a school where we endeavored to have approved a proposal to take in a few more students to increase slightly the income from tuition fees. The proposal was overruled. I wonder, now that money is being given out for not raising hogs, whether we could not get some money from the government for not turning out so many doctors.

Dr. Ray Lyman Wilbur (closing): In regard to the number of medical students: You may have missed in my paper the statement I made that I saw in the next decade ahead little chance of those social changes that would require a larger number of physicians. I anticipate that we will have in this decade considerable agitation about various forms of medical practice—whether we are to have health insurance laws passed, and so on. But I doubt if it will have any profound effect on the required number of physicians during this period.

You will note, too, that I suggested that we must think in terms of renewing such an inspection at the end of a ten-year period. I would like to emphasize, too, the difficulty of revising standards of comparison under present conditions. We will need a good deal of help on that, and Dr. Weiskotten, in particular, would like suggestions as to what you consider important and significant in the way of absolutely essential elements in the medical school.

We have thought for so long in terms of curative medicine that it is difficult even for us in the medical schools to make room for preventive medicine.

We are not so very much unlike that patient we tell about in California who broke his leg in a mine in Nevada in the early Comstock days and sent for old Dr. Buckley from San Francisco to come up and take his leg off. The old doctor went up and stayed around for a day and watched the circulation in his toes, and then said he was going to be all right and went back to San Francisco. A little later on he sent in a bill for his services, but there was strong resentment from the patient who asserted that the doctor did not do anything; if he had cut off his leg, he would have been appreciated.

We are in about that stage in many of our attitudes toward preventive medicine, and a part of our program here will be to see what we can do to bring into medical teaching the new changes that have come into medicine with the extension of public health and personal hygiene.

A Plea for Closer Cooperation Between the Association of American Medical Colleges and the Federation of Licensing Boards

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Formerly the deliberations of this body were given over to a discussion of the teaching of medical subjects and the selection of students deemed suitable for the study of medicine, and who, in your judgment, would, in succeeding years, maintain professional standards, both scholastic and ethical. More recently, one of your members was induced to present a paper dealing with medical education and the minority report of the Committee of the Costs of Medical Care. In this presentation the author acknowledges that after consideration of the subject assigned to him he reached the conclusion that the entire report of the Committee, majority and minority, had a profound bearing on medical education. He further voiced the opinion that the Committees' findings in the course of time will seriously affect the educational policies and practices of the medical school. Last year this same essayist took occasion to discuss a paper dealing with the philosophy of professional licensure. Both discussions are referred to in this presentation as evidence that medical education cannot be considered as a thing apart but is involved with general educational, economic, and administrative problems.

The subject assigned to me is one that at first blush the majority of you will be inclined to pass over with a shrug, and yet, in my opinion, a free discussion and understanding on the part of all parties interested in the subject of medical education and its administration is necessary to improve present day conditions. The subject matter which I shall present contains very little which can be characterized as new. The majority of it is taken from the conclusions reached by your own Commission on Medical Education. Since you have not been stimulated to study the question of medical licensure and its administration, you have, perhaps, scant knowledge of the difficulties which beset licensing boards and have been somewhat inclined to be critical of their accomplishments or worth.

When the Flexner report was published in 1910 showing the inadequacy of medical education at that time and the undue prevalence of low grade medical schools, an earnest body of medical educators banded themselves together to cooperate with the Council on Medical Education and Hospitals to bring about improvements. The agency, however, which in

an administrative way made possible the accomplishment and fulfillment of the recommendations outlined was the examining board in the individual states. Within a period of five or six years the recommendations were made effective and medical education was placed on a higher plane through the elimination of questionable schools, the raising of preliminary educational requirements, the lengthening of the medical course, and through improvements in the character, caliber and quality of the examinations.

With enthusiasm you have pressed on and now your Commission announces you are on a university basis and that the quality and content of medical education in America is fully equal to that of other countries. This goal has been attained not so much by coercion as by an appeal to groups of individuals interested in the problem and a fusion of their efforts to provide better medical service for our people. Since you are now, with other voluntary agencies, about to engage in a re-survey of medical institutions this will serve to stimulate all of them to do better work.

Let me first make presentation of the status of the licensing board. It is, until the Constitution of the United States is amended, the only legal agency through which, or by which, an individual may be licensed or certificated to practice his profession. It is, therefore, a governmental or administrative agency established in each state and empowered to grant reciprocity or endorsement of credentials, and to conduct examinations.

Some of your members at times have been critical of the acts of medical boards. They have made many mistakes as all other governmental agencies have done, but not all of their acts have been mistakes, and I hazard the opinion that a careful evaluation of their good deeds and bad deeds will show them to be worthy of your continued confidence and support. Some question has been raised concerning the personnel of examining boards and, perhaps, in some localities this criticism is just. I would have you remember that in most of the states the personnel is determined by appointments made by the governor, and no doubt at times the consideration of partisan politics has resulted in a bad appointment. Yet, as one reviews the acts of licensing boards during the past thirty years or more, the really discreditable acts are few and far between, and I believe it can fairly be stated that licensing boards, in the main, have performed the duties delegated to them in a highly creditable manner. Those of your members who are inclined to be ultra-critical and despondent at our shortcomings should lend a hand to impress on the appointing power of the several states the need that appointments to licensing boards should be made of the prominent members of the profession who are interested in the cause of medical education and the protection of the people.

The recommendation of your Commission on Medical Education lists the following efforts which licensing departments should discharge if they would do their part:

1. The approval of medical schools on the basis of inspections of educational program and examinations.

(A board of proper caliber will experience little difficulty in this field for the membership will be fully informed and sympathetic to your efforts.)

2. The examination of candidates from nonapproved and foreign medical schools.

3. The maintenance of a register of qualified practitioners.

4. The enforcement of medical practice acts.

5. The discipline of medical practitioners for improper professional conduct.

With these recommendations we are in full accord.

In the approval of medical schools, item 1, the Federation of State Medical Boards, desirous of giving full and complete cooperation with your aims, in 1929, adopted the following resolution:

"Resolved, That in each State the medical practice act and its administration conform as far as possible to the educational principles of the Association of American Medical Colleges."

And again, in February, 1930, the Federation amended its constitution and by-laws to provide

"In all matters of premedical education, courses of study, and educational requirements for the degree of Doctor of Medicine, or its equivalent, the Federation recognizes the Association of American Medical Colleges as the standardizing agency for this purpose."

"The Federation regards as its proper function (a) the determining of fitness for the practice of medicine, and (b) the enforcement of regulatory measures."

Your Commission stated that these several actions by the Federation of State Medical Boards would give the universities greater freedom in their endeavors to modify the rigid overburdened and overstandardized curriculum and to emphasize educational principles. It further expressed the hope that additional steps would be taken to simplify present procedure and that the individual universities and the Association of American Medical Colleges would assume more initiative and responsbiility in the program.

We of the examining boards are regretful that this effort at cooperation on our part has not been carried out by your Association. Four years have elapsed since this resolution was adopted and in two or three instances embarassing situations have been created through inaction on your part.

A professional friend has observed that the infant is surely suffering from rickets and probably will die from inanition. I beseech you to use all modern and scientific measures to bring about its restoration and give to us your full and hearty cooperation in a program which I believe can only result in benefit to all parties concerned.

ENFORCEMENT

By common consent and by legal decree licensing boards are delegated with the duty of enforcement of medical practice acts. In this field in particular we have been criticized most severely for inaction and inefficiency, and the criticism is in a measure just, though it is well to impress on you that enforcement has a different meaning in most of the states. Some boards are concerned merely with supervision over practitioners of medicine, others are supposed to exercise supervision over all types of practitioners. There is, therefore, a remarkable difference in the responsibility placed on the examining board. This disparity in responsibility will be made clear to you with a little study of medical practice acts and may soften somewhat your charge of inefficiency. It will surely bring to mind that all types of irregular practice are still indulged in despite our efforts to curb them. Whether our several enforcement agencies are provided with large or small appropriations, my individual opinion is that whatever effort is put forth in any state to curb irregular or unlicensed practice it should not be permitted to interfere with an orderly and sane administration of the practice act as applied to the graduate of the accredited medical school. He represents the best medical training of his time and his conduct and welfare should be the intimate concern of the medical school and the licensing board.

The medical school, I feel, can justly be criticized for taking too little interest in its graduates. It is reported that in some instances the school has even engaged in competition with them. You should devise ways and means to keep in intimate touch with your graduates, to follow their examination before licensing boards, and to aid them when they are applicants for reciprocity. In this same manner I believe it to be the duty of licensing boards to supervise carefully the conduct of men holding their certificates, and to aid them, so far as possible, when they find it necessary to remove to another state to engage in practice. Some minimum standard of exchange of credentials should be worked out and adhered to.

Legislation has often been characterized as an American disease. We are prone to recognize an abuse and to prevail on the legislature to enact a law to curb it. Too frequently the remedy is worse than the offense in that far reaching complications to administration may ensue. Much legis-

lation we have championed is ill-advised and many compromises which we have agreed to or supported we later have had reason to regret. I feel that simplification in legislation and administration should succeed our present complicated procedure and that the end which we all seek to attain, an American system of licensure, can only be reached in this manner. So long as an individual state continues to enact new provisions to meet a local condition, particularly in the field of enforcement, just so much further removed is the goal. We are all primarily interested in developing the best type of medical service.

Cult and irregular practice is a by-product and should be relegated to a secondary position. The various agencies concerned should unite to inform the public that our aims are both practical and idealistic and will contribute to the public's good. Our future rests on the basis of scientific discovery susceptible of being translated into service, and the licensing boards will perform a higher grade of service if they are permitted to place the seal of approval on men of highest qualifications only who possess the best medical knowledge of our time.

To this end I would enlist your cooperation and support. I would suggest that a committee from your Association, from the Federation of State Medical Boards, and the Council on Medical Education and Hospitals be selected to study these problems, and others which may occur to you, and, if possible, make recommendations to the several boards where at the present time a lack of uniformity in procdure or administration exists. Perhaps it will take several years to bring about reforms. The subjects which occur to me are:

1. How can a universal minimum standard of licensure be adopted so that an individual of character and qualification will be able to move from one state to another with a minimum of expense and red tape?

2. Should internship be made a requirement in all practice acts?

3. Is administration improved when removed from the supervision of the medical profession?

4. How can the personnel of examining boards be improved on?

5. Should legislation in the several states designed to control cult or irregular practice, that is, either practice by unlicensed individuals or by individuals possessing a lower preliminary and professional training, be made to include practitioners of medicine as well, or should the medical practitioner be exempt?

6. Would enforcement as applied to unlicensed cult and irregular practioners be improved if removed from medical practice acts and delegated to another agency?

These are questions which mostly concern administrative boards. If

recommendations from the joint committee were then referred to the interested boards and recommended for adoption, I, for one, feel that to a very great extent they will be approved and that all of us will enter into an era of understanding and cooperation.

I would be remiss in this short presentation if I did not bear testimony to the splendid contribution which has been made to the entire subject by the National Board of Medical Examiners. This organization has very greatly improved the character of state board examinations. It serves a splendid purpose but, of course, until the Constitution is amended it cannot supplant the examining board. The interested bodies should concentrate on a program to elevate the practice of medicine and to educate the public to the worth of good medical service to the community.

I trust that this somewhat disjointed presentation of the case of the medical board will awaken your interest and that we may together work out our problems to the end that medical education and enforcement may be improved on. I have dealt quite frankly with the problems which primarily confront the licensing board, and if the committee suggested is appointed, I hope your Association may bring some of its problems to the joint committee for review and recommendation.

DISCUSSION

DR. I. D. METZGER (Pennsylvania State Board of Medical Education and Licensure): I desire to express my appreciation of the privilege of meeting with your organization, and especially of the honor of having been invited to a place on your program. As a member of a state board for twenty years, during which time I have had the opportunity of visiting many of your schools as an official inspector, I have acquired a high respect for the work which you have done in the past and are attempting to do now. You, year by year, produce the physicians whom we as members of state boards attempt to place and control in the various communities of our country. Our duties and obligations to its citizenry are mutual, hence the need for the closest cooperation is obvious.

The essayist has just reminded you of the action of the Federation of State Medical Boards four years ago in placing into your hands the determination of acceptable medical schools whose graduates should be received for licensure in the various states of the union. This action was prompted with the hope that it might establish a relationship which would be of mutual advantage and result in a better product in medical practice.

Murmurings from various quarters seem to indicate that this relation is not justified. Perhaps the Federation expected too much by way of reports gleaned from inspections made by your organization or of disciplinary measures for derelictions in medical schools, and, in general, of helpful reports as to the standing of the various medical schools of the country. Relatively little of this has been

forthcoming from your organization to the state boards. It may have been our fault.

The essayist referred also to the standardization of schools made some years ago. I am wondering if this standardization has not gone to seed. It accomplished its work on a basis which no longer meets the needs of the times. Standardization tends to stultify growth after the goal has been reached. Schools that have attained minimum requirements may rest on their oars and unwittingly drift into eddies of relative incompetence. Incentives to improvement should be constant and impelling.

This applies not alone to the so-called weaker schools but also to the stronger. A team of all stars is apt to make a relatively poor showing in team-work. The making of a physician requires the acme of effort at correlation in order to develop a well-balanced product. The actual test of value in a medical school may be made by a determination of the ability of its teachers. But the best physicians develop when these pedagogical forces all tend steadily toward one definite goal. That is a very important point. There is too much waste of effort, too much weakness in certain departments, and too strong forces pushing in other lines with the danger of developing eccentric minds in medical thought. Over-enthusiasm by a strong teacher may so overshadow the work of others as to produce an eccentric practitioner of menacing tendencies. Herein lies one of the most important functions of the dean as administrator.

All schools, whether medical or not, need prodding to greater efficiency. Zeal for excellence in such an intimate organization as yours can scarcely be expected from a spirit of rivalry. Standardization, moreover, seems to have dispelled this desire to excel. Medical boards in the past have tended to prod lagging medical schools. Their power of penalization has quickened the zeal of some schools. A systematic check on results in examinations, with direct conference with school authorities later, has been the means of changing the personnel in certain departments of medical schools. With all their inefficiency, boards generally pluck the weak ones. Moreover, the sense of an impending test at the end of the medical educational career keeps the mind alert and aids the teachers in maintaining in the students a continuous interest in medical study.

Are not our medical schools, whom you represent, tending too much to go along in the old ruts? This is so much easier than to blaze new trails. How many of your teachers are furnishing the same pabulum that was prepared a few years ago? Of course, minor changes and adaptations are made, but, after all, is it not the old stuff?

This going along reminds me of a story of Teddy Roosevelt. I do not know whether I should tell it in the South here, but it is an interesting story anyway. Teddy, during his 1912 campaign, was making a very drastic political speech in which he upbraided the Democrats severely. After he had completed his address, a gentleman of the audience got up and said, "Mr. Roosevelt, may I interrogate you?"

"Yes."

"Mr. Roosevelt, will you tell me why you are a Republican?"

He said, "Yes. My father was a Republican, and my grandfather was a Republican."

"Mr. Roosevelt," he said, "if your father had been a horse thief and your grandfather had been a horse thief, what would you have been?"

He said, "I would have been a Democrat."

In the matter of going along, you have to do it in the medical school, and it is much easier.

A social revolution which affects all education and especially medical education is now occurring. This applies not alone to the economic situation in practice (that is what we are crying about most of the time, state medicine, you know), but also to the attitude of our citizens as to our duties as physicians. Instead of producing qualified rescue agents in respect to health and disease, the demand now calls for ability to prevent disease and also to assure comfort and efficiency in a state of apparent health.

The engineer says, "I can determine the tensile strength of all types of material and evaluate their efficiency in use; why cannot you as a physician do the same with my body?" Factors, we explain, of vital force and energy activation alter the analogy so that no reliable estimation can be made. However, modern physicians should be able to discern the functional ability of human beings much better than they did in former days.

One of the things that has frustrated to a certain extent our annual health examinations is the fact that doctors could scarcely determine when a body was in a state of health and when it was not. The acme of all diagnosis is to evaluate accurately the physical condition of a body in an apparent state of health.

Much of this ineptness comes from the fact that medical students have not been sensitized to its value by personal experience acquired from a critical survey of their own bodies. It seems almost unbelievable that we should teach these medical students for four years how to take care of other bodies without subjecting them to the same tests and making it a personal experience with them.

I may interject this: A year or so ago the question arose in our State as to the physical condition of the teachers in the state normal colleges. About thirteen such colleges furnish teachers to the state of Pennsylvania. The superintendent of public instruction asked me and a representative from the department to check up on the nature of health care to these teachers. To our surprise we found that as many as 10 per cent of those teachers were being prepared for the purpose of teaching who could not possibly become teachers because of their physical condition. It is like training soldiers and knowing that they could not become active soldiers.

We found, furthermore, that no critical survey is made of the physical condition of these young men and women. There was inaugurated then and there, after an address before the presidents of these colleges at a special meeting in the office of the superintendent of public instruction, a plan by which every boy and girl in the training school should have a critical survey made not only at the time of entrance by a physician in the school, and a definite survey at least once each year, and that no one should graduate from that training school who had any physical imperfections that could not be corrected.

Tuberculous persons may not teach in Pennsylvania. Certification from a physician must assure that they do not have tuberculosis before they may teach. Persons who have bad teeth, defective nasal and throat conditions, or any physical

defect of that type, shall not be graduated from any of these schools until those defects are corrected.

The effect of that activity is to impress on those young people that the first consideration is good health, and as they go out over the state and teach youngsters they will have that constantly in mind, that the first thing they must consider is the physical condition of those children, and they will become living examples because of the fact that they themselves have been sensitized to the need of that thing. We ought to do that with the medical students. It is a sad reflection on us as leaders that we have not done this sort of thing.

All sorts of cults have sprung up and annoyed medical boards by their illegal practice in order to meet the demand of our citizens for beauty and for comfort. Ingenious appliances of all sorts have been invented to soothe their longings and to intensify their physical efficiency. A physical survey of medical students would, no doubt, elicit need in nearly every case for systematic exercise of some sort suitable to his weakness. A specially trained physician-director could thus augment the efficiency of every student, and sensitize him to the value of such care, as well as acquaint him with the best methods to attain the same.

Lastly, may I say, one of the greatest needs in medical education today is the development of a higher sense of responsibility in the medical student. This essential factor in the art of medicine, when undeveloped, invalidates the whole product and liberates into practice one who is apt to become a menace rather than a blessing to society. Physicians are made, not born. Unless the ideals and the motives of the student are made to center upon a life of devotion to the welfare of humanity, he has missed the mark. The influence of loyal and consecrated teachers who can mediate this sense to the placid mind must be of the highest type. The study of medicine without such altruistic motives becomes arid and monotonous. The wholesome guidance of a corps of noble teachers, on the other hand, vitalizes every subject taught and through it enkindles an appreciation of its value in human needs.

Deans of medical schools—give us cultured, learned, zealous and responsible graduates, and we as members of medical boards will gladly welcome them into licensure in the various states of the Union.

Dr. Harold Rypins (New York Board of Medical Examiners): The two preceding speakers have intimated that the state boards of medical examiners have been somewhat disappointed at the reaction of this organization in reference to their resolution and the amendment of their Constitution. Up to the present moment I have been inclined to share that resentment, but I see now that we were just as much wrong as you were.

The fact is that the Federation and the various state boards were not equipped to really serve the medical schools in this country. The fact is that this Association is apparently not equipped to do it alone. I think in the interim the fact that the Association and the Council on Medical Education, together with the Federation, are attempting to make a joint survey is the very best evidence of cooperation by these three bodies and would do a great deal to bring them together in one unified effort.

There is some evidence of lack of cooperation on the part of medical educators in the problems which state boards face. I was invited to a sister state

several years ago, where they have about the worst medical practice act in the country, and they were attempting to amend it. In order to get some light, I called on the dean of the leading school of that state, a member of this organization and a good friend of mine, and I said, "You have lived here a long time and you know what is wrong, and if you will tell me what you want me to say I will say it."

"Oh," he said, "we are not interested in the medical practice act. We just don't pay any attention to it."

It is that attitude on the part of many deans which has allowed medical practice to be as poor as it is in some of the states. In hearings in Albany and other capitals where we have annual battles on medical legislation, it is the rarest thing to see not only a dean but a member of the faculty of any school come forward and use his influence and his oratory to support proper standards of licensure.

These things are important to the medical profession. They are important to the public, and they are important to the schools. So I feel that those of us who are charged with this duty have a right to expect the active support of medical educators. That has certainly not been forthcoming in the past.

On the other hand, I have already spoken of the cooperative effort in reference to the investigation of the medical schools by these three bodies. That, to my mind, will solve one of our very major problems. We have also had very excellent cooperation between the Federation, the National Board, the Council on Medical Education and this Association with reference to the problem of American students studying in foreign medical schools. That is primarily a state board problem, but this Association and the American Medical Association and the National Board have all cooperated and by the weight of their authority we were able to accomplish something which the Federation of State Medical Boards alone would not have been able to accomplish.

In conclusion, I would like to draw your attention to a plan which has been in operation in New York State for the last two years, which I think is going in the right direction toward such cooperation. Here are nine medical schools in New York State, each having one or more deans, and we have a board of medical examiners of ten men. Every year we meet together as the guests of one of the medical schools, and spend half a day or a day talking over very frankly the points of difference between the state board and the medical schools. These meetings have resulted in a great deal of friendly interest. We have been able to iron out many of our differences. We have been able to understand each other, and I believe the people who attend such meetings feel that they are of very definite value.

I suggest that if other states or other localities, where there are three or four schools, would get together and meet once a year, the deans would get to know what the boards are like, and the boards would get to know what the deans are like, and a good deal of cooperation will be effected.

Dr. Alphonse M. Schwitalla (St. Louis University): May I ask Dr. Platter in how many states there is the custom of having an advisory group composed of, say, the deans of medical schools, to give some assistance to the state board? It seems to me that the invitation for that kind of a group should come from the

state boards rather than from the medical schools. We have tried it in Missouri and it is only partially successful, but such an advisory group could easily be recruited in each state and effect some of the purposes Dr. Platter called to our attention.

DR. H. M. PLATTER, closing: Answering Dr. Schwitalla, Ohio has been fortunate to have for many years as a member of the state medical board a dean of a medical school, and through him we have been in rather close touch with the medical schools of the whole country.

Dr. Rypins' idea is a good one. We can utilize some of the "retiring" brains of the various medical schools to good advantage in Ohio.

My paper was couched in diplomatic language for the reason Dr. Rypins assigns. The fact that you are now about to engage in a resurvey of all medical schools in this country seems to me to demand that we forget the shortcomings of three or four years ago for the time being if you will rally enthusiastically to the support of the survey committee and give us a complete and comprehensive report.

There is one other thing in my paper that was passed over, and that is an intensive desire on my part to nationalize medical practice. I know in this one particular field I am at variance with most of the representatives of state medical boards, but I like to look at this problem beyond the confines of any one state, and I would like to see the time approach when a man of character and proper preparation, duly licensed in one state, may practice in all of the states with as little red tape as it is possible to have under the law.

Unfortunately, at the present time there are additional complications in the several states, when a good man wants to cross the border, that I personally believe should be obliterated.

This is my message, and it is couched in ladylike language, if you will, because I thought that all that was necessary to do was to call your attention to the fact that you are not living in ether and away from all of the rest of the folks, but that there are other people who need your help to advance the cause of scientific medicine.

Clinical Clerkships for Juniors

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The lack of uniformity in the management of clinical clerkships in American medical schools was emphasized last year by Dr. Goodwin, and his arguments in favor of introducing the junior to bedside work are so cogent that we need not repeat them.

I am convinced that the greatest difficulty which the medical student encounters is the effort to comprehend the manifestations of disease which the patient exhibits to the skilled observer and correlate them with the disease picture drawn in descriptive medicine. The multiplicity of facts which the basic sciences have furnished him are abstractions until he has been familiarized with patients and has been taught to weigh the independent variables with which medicine must deal. It seems to me that the student should be directed in clinical medicine by the same method of graduated steps which has proven so satisfactory in the laboratory sciences.

A number of years ago we became interested in the problem of junior hospital ward walks and mustered up the courage to shift the junior and senior services. We have now had a period of five years in which to evaluate this change, and I thought it might be profitable to present to this body the results of the experience and facts we seemed to have learned through its administration. I am sure we are not inclined to return to the older plan, believing that the hospital cases are sufficiently better controlled and the atmosphere of the hospital is a better place to teach the uninitiated junior to observe clinical manifestations than our dispensary had proved to be.

The scheme, briefly, is as follows: the junior class is broken up into sections of eight students each and these are assigned to different departments in the hospital. We have found it most convenient to have all ward walks uniformly given at one hour, which happens to be 10 a. m. I think it is obvious that if we have each department electing some special time, it would disturb the remainder of the schedule and we would lose time, or else the students on special ward walks would have to be excused from other required class activities. In the more fundamental subjects, such as surgery, medicine, pediatrics and obstetrics, the sections have two services, and in the other clinical specialties, one service in the year. The length of service is, approximately, one month.

The ward walks are under department supervision and are given by

senior faculty men on service in the wards, with the assistance of their juniors. Perhaps I should explain that our whole hospital staff organization is on a faculty basis; in each department there are two senior men in charge of the ward, and each has as his assistant a junior man. The ward walk covers one hour and in this the professor selects from his material the cases that best illustrate the subjects he is developing in that semester. If a student has been specifically assigned to the case being presented, he is responsible for report of history, laboratory findings and other discussion of the case which may be called for, otherwise all students in the division are considered responsible for a general study of all of the cases in their ward.

As I observe the operation of the ward walks, they vary considerably, depending on the idea which the clinical teachers may have in mind. Sometimes they are developed as direct clinics. At other times, the case stimulates a discussion of some particular disease with an attempt to place the patient in proper relation to the progress of that disease and show how it may illustrate any manifestations that are prominent or instructive.

At first it took some time for the faculty to become appreciative of the fact that they are dealing with junior students whose background is very much more limited than that of senior students. There is still, from time to time, a complaint on the part of the juniors that the presentation of the case is over their heads. I am not certain that the point is well taken, and believe that occasionally a rather "high power" demonstration is a stimulus to the section and very good pedagogy. In a very few instances teachers have neglected the use of the patient and resorted to an academic lecture which the students have denominated "standing clinics," and which might more comfortably be held in an amphitheater.

The student is required to write a history from personal interrogation of his patient. At first this history tended to be "cribbed" from the hospital records or sometimes written into the hospital records. This seemed to be undesirable and we set up the junior work entirely independently of the hospital organization in its records. This made it necessary to provide a clinical work director with sufficient assistance from the faculty adequately to supervise the junior work. This work has grown to the point where a complete set of records is developed by juniors, studied by this second group, and, as a result, history taking is taught by this group. The junior student, then, has his case assigned, works it up under the direction of the ward walk director or one of his staff, writes up the history, laboratory findings and progress notes, and submits these records to the director for criticism. He follows the case to operation and records this or any other particular therapy. If the patient dies, he must write up a full post mor-

tem report. In his conferences with this second staff he is given references for supplementary readings and any other advice necessary to help him understand the problem of correctly working up a case. By putting this work into the hands of the second group, it saves the hospital staff many details which they have neither the time nor the inclination to carry out. As these requirements have grown, it has become necessary to provide time for the students to study patients assigned to them at such times as might be agreeable to the other problems in the curriculum. Consequently, in the last two years we have assigned the students to the hospital not only for the ward walks at 10 o'clock, but for afternoon clinical clerkship work with the patient at definite hours using this time exactly as we would the time in any other laboratory. This permits not only proper taking of histories but adequate study of the case at the bedside to secure a thorough understanding and appreciation of clinical manifestations.

Through the intern service the student is provided with material for laboratory work and is furnished a laboratory in which urine analyses, blood counts, bacteriologic studies, etc., can be carried out. This latter laboratory is under the direction of the director of clinical laboratories. A student is privileged to ask for any special laboratory procedure if he can, after consultation with his advisor, satisfy him that there is logical reason for the same. His own hospital record is independent of that regularly required in the hospital, and he is permitted, in the light of his study, to disagree with ward walk and other faculty diagnosis, providing he has logically and thoroughly set forth his conclusions. He may use afternoon time assigned to hospital work for library reading in connection with the case under study.

The most difficult thing in connection with this service is to develop students in direct bedside observation, and the most encouraging thing about our system is that the student spends much more time with patients in the latter end of the year than in the beginning of the year, which makes us hopeful that he is benefiting by this laboratory procedure. As our system is running at the present time, no effort is made to have the students all follow the same sequence of division assignments, and as our ward walks are being used there seems no particular advantage in selecting one service before another.

Students assigned to an individual case are required to be present at operations and since the operative work is only partially regulated by curricular schedule, it becomes necessary to excuse this student from any other class exercises at the time of operation. This same plan is also followed in conjunction with post mortems.

After a study of our schedule in this work over several years, it seems

to be reasonable to assume that the junior student can work up and report on about fifty patients per year, and in his general ward experience he will have had an opportunity to observe all of the major diseases covered in the junior curriculum. It is also interesting and rather satisfying to note how regularly the essentials of disease entities have been covered. This is partly the result of care on the part of assignment of patients, partly the result of the judgment and discrimination used by clinical ward teachers, and partly due to the fact that in regulating admissions to the hospital we keep continually in mind the needs for teaching work.

I believe that some such procedure as I have outlined is indispensable in connection with handling the junior student, if he is to advance with desirable rapidity in comprehending clinical problems. We find that this work tends to influence all of the other work of the junior curriculum and the general academic exercises are properly built around the needs to amplify the clinical teaching. I think I am each year quite amazed at the ignorance of junior students when they begin their ward work, and before the end of the year I am also surprised at the comprehension which they have secured through this type of study. It is very encouraging to see the junior return to the patient and amplify the history as his comprehension of the case extends, and he realizes his deficiencies in his first effort to write a good history. It is also impressive to see him go back and study not only the progress of the disease but its manifestations in an attempt to perfect himself in technical methods and increase his skill in the use of various diagnostic procedures.

We feel that the hospital is a better place than the dispensary to initiate the junior student into his clinical work, and also that the dispensary is more valuable to seniors who have had careful training as juniors in working up and reporting cases. We believe it is of particular advantage to the student to have the opportunity of daily following a senior staff man in his rounds and also in having his work frequently enlarged and evaluated.

The Teaching of Physical Examination in the Preclinical Years

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"From the beginning of the curriculum and throughout, attention should be directed primarily to health, its preservation, perfection or restoration, and not to disease."

"The preliminary sciences in relation to the rest of the medical course, and also human anatomy and physiology in relation to clinical study, should be continuous in their application, revision and development."

"Anatomy and physiology should be taken, pari passu, as interrelated subjects and with reference to their subsequent clinical application, and should be pursued largely in relation to the living body."

"Instruction should be by means of (c) demonstrations on and examinations of the living body."

"During the course the student should become familiar with the methods of manual examination, and be taught the use of such instruments as the clinical thermometer, the ophthalmoscope, the laryngoscope, the rhinoscope, the otoscope; the estimation of blood pressure; the examination of the blood, and the analysis of secretions."

The courses in anatomy and physiology, as they are being conducted at present in medical colleges, must be revised completely if the above principles, as set forth in the report of the Committee on Medical Education of the British Medical Association[1] are agreed to by their faculties.

A change in point of view with regard to the aim of the anatomy course is the first step necessary. Instead of providing a course of instruction in a subject, "anatomy", the head of this department must arrange a scheme of teaching which will enable the student to acquire a knowledge of the structures of the human being, of the relation of these structures to the functions they perform, of the characteristics of these structures which indicate that they are in a state of health, and of the methods of manual and physical examination by which it can be determined that they are healthy and that they perform their functions normally.

Anatomy, in other words, should be taught to the student not merely with reference to structure and the science of anatomy, but with relation to function and also with relation to whether it is in a healthy state or

1. *Brit. M. J.*, Suppl., April 21, 1934.

otherwise, the determination of which can only be reached by a definite examination with his eyes and hands. It should be possible for a student who has completed the dissection and study of a part such as the upper extremity, to conduct and record a physical examination by inspection, palpation, measurements and tests of function in a living individual (such as a fellow student) of either the shoulder, elbow, wrist or hand, or any other region of the body. Pedagogically, such an undertaking forces on the student the necessity to use and apply the knowledge he has acquired, and in doing so he must visualize the part as a whole, i.e., synthesize the knowledge he has obtained of the structures in the part by dissection, an analytical process. Examining a part in a person in this manner would do more to make the student realize the value of a knowledge of anatomic structure as an indication of the health of the individual than would any other procedure.

At the same time, it would stimulate and maintain his interest in the study of this subject, which is so apt to be dulled by the constant demand for the memorization of innumerable facts under the present system.

In time, it should help him in assessing the value of a knowledge of the important structures and enable him to select more intelligently those of greater from those of lesser importance. In order to carry out this selection, the student would have to use his thinking powers as well as his memory, a procedure which the present system of teaching anatomy only necessitates to a slight degree.

The making of a physical examination would do far more to impress on him the importance of the relationship of structures to one another than their memorization. It should also have the effect of making the student appreciate the fact that a knowledge of a part as a whole, is of much greater significance than a meticulous knowledge of many of the minor structures of which it is composed. By making an examination of the functions of the part, he would learn to understand the relation of structure to function and thus add associated ideas which will prove of assistance in enabling him to recall the presence and character of their physical form.

Examining function and structure concurrently will make the student realize that the whole is much more than the sum of its parts. After the student has completed his course in anatomy and made physical examinations of various parts of the healthy individual, he should be much better prepared to undertake the physical examination of a patient when he enters on the studies in his clinical years.

The final examination in anatomy at the end of the course should include the making of a physical examination, as suggested, of one or

more regions of the body of a person. The manner in which the student carries out this practical procedure on a human being in addition to the efficiency of the examination should be observed and used as one of the methods of determining whether a student really has the particular qualities of mind, character and personality, which will enable him to become a practitioner of medicine. Certain of the students who are capable of learning and memorizing reasonably well, so as to pass the present form of examinations, are found hopelessly incapable when they come in their later years into contact with patients in the hospital. If students of this undesirable type could be discovered in their junior year and eliminated at this time it would be greatly to their advantage as well as to the standard of future practitioners. The ability to make a satisfactory physical examination should be of value in determining whether a student has clinical ability of this kind or not.

At present, many instructors in anatomy claim that instruction is already given along the above lines in classes on "surface anatomy", "surface markings", "applied anatomy", "surgical anatomy". The great defects in all of these special classes is, in the first place, that the chief emphasis is put on "anatomy" instead of on a knowledge of the healthy human being as to his structure and function; and, in the second place, that the methods of physical examination as taught when the student begins his clinical subjects later in his course are not used systematically in any of these courses. Another fault in the present courses of this type is that the student merely memorizes another group of anatomic facts, rather than obtaining an understanding of their application to the examination of a human being to see whether he is healthy or not.

Although these present courses may help to stimulate the interest of the student in the ultimate application of his anatomy, they do not do so in anything like the same degree as the teaching of physical examination on a healthy person would do. Such a physical examination is performed in the same manner as it will actually be performed on a sick person later, and thus should add greatly to its powers of stimulation and motivation during his anatomy course.

One of the outstanding arguments against teaching the clinical application of anatomy in the preclinical years has been that the student would become so interested in patients and their diseases that he would fail to grasp the significance of anatomic knowledge as a science. It has been held that the student would be fascinated by the study of patients and the diagnosis of their diseases, and, therefore, would not study the scientific aspect of anatomy with the same attention and would not go through the arduous grind without which an adequate knowledge of this subject is

difficult or next to impossible to acquire. The force of this argument loses most of its significance if the newer point of view of approaching anatomy as a knowledge of normal healthy man is accepted. Learning how to make an examination of the shoulder of a man to ascertain whether its structure and functions are normal and healthy, should in no way interfere with or detract from a student's scientific knowledge of the parts of which it is composed. "The purpose and meaning of anatomy can only be learned at the same time as its structure. The results of analysis must then and there be reconstructed by a synthesis." (Newman.)

Many of the above arguments apply to the teaching of the application of physiological principles during the course in physiology. The examination of the blood of a fellow student, such as the estimation of hemoglobin and the counting of the red and white blood cells, might be undertaken at the end of the theoretical course. The examination of the heart sounds by direct auscultation, not using a stethoscope, of the pulse, and the taking of the temperature and blood pressure of a healthy individual would be included when the circulation of the blood is being taught and carried out as part of the physical examination of a person in health. After the student has finished his instruction in anatomy on the thorax and in physiology on breathing and respiration, he might be taught their examination on a healthy individual by inspection and palpation of the form and movements of the chest and by percussion of the boundaries of the lungs in accordance with the normal variations in resonance in the different areas and by auscultation with his ear to the chest wall, without the use of a stethoscope, of the character of the normal respiratory sounds. He should be prepared to carry out the analysis of the urine and other secretions of a person in health. It is questionable whether instruction in the use of instruments necessary for the examination of the special senses is advisable at this early stage of the medical course or possible of accomplishment. The student should become proficient in the use of his eyes, his hands and his mind before being allowed to use mechanical adjuvants in the examination of a person. The provision of the instruments for these special examinations would be extremely difficult and expensive.

The making of a physical examination of a person is a valuable procedure in an educational sense. It requires the student to use his own powers of observation on a human being and to record precisely and accurately the facts he observes. This differs very essentially from the examination of a dissected part in a dead subject or of a section of skin under the microscope or a prepared specimen in a museum bottle, as the person being examined is not only living but has emotions and sensitiveness which may influence the nature of the examination being made. The

student, therefore, has to conduct each step that he takes with a certain care and consideration, which is quite unnecessary in the ordinary laboratory observations. It teaches him to be systematic and thorough so that he will not omit essential features. It teaches him to be precise in his findings so that, when possible, his measurements are recorded in exact numbers. It teaches him not only to see with his eyes but to interpret the significance of the visual image with his mind. Similarly, it teaches him to use his hands and sense of touch in the handling of a part of a living person and to learn the consistency and feeling of the structures of which it is composed in a healthy individual. It would inform him of the normal functions of a part as he sees and feels them performed.

PHYSICAL EXAMINATION FOR STUDENTS IN ANATOMY AND PHYSIOLOGY

I. *Inspection*
   (a) General appearance as compared with corresponding part of opposite side.
   (b) Form and shape with its characteristic features.
   (c) The ability to perform the functions of the part in a healthy person.

II. *Palpation*
   (a) The feeling and consistency of the planes of structures as compared with opposite side.
   (b) The correspondence in form and shape between the two sides.
   (c) The character of the appreciation of sensation as indicated in the part examined.

III. *Measurements*

IV. *Tests of functions*
   (a) The movements of the part as carried out passively by the examiner.
   (b) The special functions of the part examined.

FOR CHEST AND ABDOMEN

V. *Percussion*

For the variations in resonance in the different areas in a healthy person.

EXAMPLE OF A PHYSICAL EXAMINATION CONDUCTED AFTER COMPLETING THE DISSECTION

SHOULDER AND ARM

Inspection

The form of the two shoulders is approximately the same, although the right one appears slightly larger, owing to a greater muscular development, especially of the deltoid muscle. The skin is coarse and rough and profusely supplied with hair, except over the clavicle and the subclavicular fossa.

A black spot, the size of a five cent piece, is present on the back just above the spine of the scapula. Just above the insertion of the deltoid on the outer side of the arm is a scar, half an inch in diameter, probably due to vaccination. The active movements of the arm on the body are free in all directions. The movements at the shoulder joint with the scapula fixed are free in all directions with the exception of inability to abduct the arm beyond the level at a right angle with the body.

Palpation

The skin over the right shoulder feels thick and firm and the hair is rather bristly, except over the clavicle where the skin is thinner and more easily pinched up off the underlying bone. The black spot on the back can be moved freely on the subcutaneous tissues as can also the scar on the arm. The subcutaneous tissue is moderately thick and firm. The muscles are solid and well developed. The clavicle is normal in shape and position. The coracoid process is rather difficult to feel on account of the thickness of the subcutaneous tissue and the well developed deltoid muscle. The acromion process and spine of the scapula are normal. The head of the humerus can be felt in the axilla, lying in its normal relation to the glenoid fossa of the scapula. The axillary and brachial arteries can be felt pulsating in the axilla and down the inner side of the arm beneath the inner edge of the biceps muscle. No lympathic glands can be felt along the line of the axillary vessels, under the edge of the pectoralis major muscle or along the axillary border of the scapula. There is no change in sensation to touch over the shoulder and arm. The movements at the sterno-clavicular and acromio-clavicular joints are free and normal. The movements of the shoulder joint are free, except that the arm cannot be abducted beyond a right angle. The various muscles can be felt contracting and hardening during the movements of the shoulder and arm and their strength is above the average, probably due to the fact that this man plays tennis.

Modern Foreign Language Requirements for Admission to American Medical Schools and Colleges

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The place of foreign modern language study in the curriculum of American high schools and colleges, especially in its relation to the requirements for premedical students, has served its purpose to recent years, but it is no longer satisfactory. American college administrators and deans of medical schools and colleges have been so occupied with the more pressing need of adjusting other subjects in the curriculum to the rapidly changing conditions that the subject of foreign language requirements has of necessity been postponed to later consideration. The time is now ripe, I think, for a serious discussion of this question. An adequate knowledge of one or more foreign languages is an indispensable part of a liberal education on which depend the happiness and efficiency of the physician, the dignity of the medical profession, and the highest welfare of the public. This much is admitted by all. Differences of opinion exist, however, regarding how much attention shall be paid to the ancient languages and literatures and how much to the modern, and the relative importance of the major modern foreign languages to the average medical student and physician.

At present, the minimum standard of education for admission to an approved or grade A medical school are the equivalent of the first two years (60 semester hours) of the course leading to the degree of Bachelor of Science or Bachelor of Arts, in approved colleges of arts and sciences. The requirements prescribe eight semester hours of biology,[1] twelve of chemistry, eight of physics,[1] six of English, and the remainder in electives.[2] Less than one-fifth of the schools require more than this, but practically all of them give preference to candidates who have college degrees.

It is noted that the above requirements make no mention of modern foreign languages, though the Council on Medical Education and Hospitals of the American Medical Association and other competent authorities on medical education strongly urge a reading knowledge of a modern foreign language. If the reading knowledge of this language is obtained on the basis of high school work the student is then urged to take another language in his college course. It is not considered advisable, however, to

1. The University of the State of New York will issue a medical student qualifying certificate on the basis of six semester hours in these subjects.
2. Although for sixteen years, two years of premedical college training has been required by every class A medical school, there are still nine states which have failed to adopt this standard.

spend more than twelve of the required sixty semester hours on foreign languages.

Because the majority of medical schools either prescribe or urge a reading knowledge of French or German, this language requirement is often interpreted to mean that no student may hope to gain admission in any grade A medical school of the United States unless he possesses what is often described as a reading knowledge of either or both languages; that all other modern foreign languages are excluded from the possibility of their being offered in lieu of the traditional French or German.

It was with the object of determining the exact status of modern foreign language requirements for admission to medical schools that a questionnaire was sent to every dean of a medical school in the United States and Canada. The results, embodied in this article, show not only a lack of uniformity in the language requirements, but a wide difference of opinion among medical educators on the relative value and importance of foreign language study for premedical students and for physicians.

To the question, What modern language or languages are required for admission to your college? the following replies were obtained:

	United States	Canada
Total number of medical schools	76	10
Schools requiring or urging		
French or German	35	5
French or German (Spanish by exception)	1	
French or German or Spanish	5	
German	3	
German or French or Italian or Spanish	2	1
German or French or Italian or Spanish or Latin or Greek	2	
German and French	3	
Any modern language	6	1
Schools having no language requirement	13	2
No replies to the questionnaire	6	1

To the question, Which language or languages are preferred by your college? the following replies were received:

	United States	Canada
German	30	2
French		1
French and German[3]	13	0
French or German	14	2
French or German or Greek or Latin	1	0
German or French or Spanish	2	0
No language preference	8	4
No reply to the question	2	0

3. Obviously this should read "French or German," though the replies read "French and German."

To the question, Why preference was given to the language or languages indicated? the following reasons were given:

More scientific and medical literature	38
Importance	8
Usefulness	4
Helpfulness	1
Application	4
Postgraduate work and research	2
Cultural	1
Custom	1
Demand	1
No preference	1
No answer to the question	18

An analysis of the replies to the first three questions contained in the questionnaire reveals that though German and French are more often required or urged for admission, other languages, especially Italian and Spanish, are often accepted. It is also seen that no less than fifteen medical schools have no language requirements at all. Preference is, of course, given to German or French chiefly because of the vast amount of scientific and medical literatures in those languages.

This preference for German or French may be traced to the year 1893 when a knowledge of either language, "at least sufficient to read the scientific papers constantly appearing in those languages," was deemed highly desirable. Originally, it was seriously believed that the requirement would enable the medical student or practitioner to read medical and scientific papers published in those languages. This was and still is a false hope. The experience of many educators with medical students is that two years of college work in either language does not give the student sufficient knowledge of French or German to be able to translate papers written in either language or even to give him an idea of what it is all about. Unfortunately, the superficial acquaintance with these languages which most premedical students acquire in college is so slight as to be practically useless.

This is no startling revelation. It is a condition which has long since been pointed out by prominent authorities. Dr. Abraham Flexner, in his *Medical Education* (1925), emphasizes the fact that American medical students have no training in foreign languages. He points out that since the medical schools that require either French or German do not apply a genuine test, the paper testimonial that they commonly accept does not really guarantee the degree of command which the student is assumed to possess. The result is that a large proportion of students admitted to a medical school on the basis of ability to read French or German cannot make out the meaning of a simple piece of either language. The require-

ment, according to Dr. Flexner, is not enforced, and no university has yet frankly admitted and faced the fact. Dr. Flexner bases this statement on a simple examination in French and German given through the courtesy of several university authorities. About 50 per cent of the students passed in French; about 25 per cent in German. Therefore, the difference between schools that make no requirement at all in French and German and the schools that require one or both is much less than the catalogues imply.

Dr. Fred C. Zapffe, the Secretary of the Association of American Medical Colleges, holds similar views. He believes that since medical schools accept a credit at face value, the language requirement at present is at best a perfunctory one. The medical schools do not apply any test which would show that the student really has the knowledge he is supposed to have when he presents the twelve hour credit. Furthermore, Dr. Zapffe is convinced that it is not possible to acquire even an understandable reading knowledge of either language in twelve hours, and his personal experience with medical students has proved to him that they cannot read either language.

Dr. Edward S. Thorpe, the assistant dean of the Medical School of the University of Pennsylvania, in his paper on the "Relative Value of Cultural Subjects in Premedical Education," reveals his amazement at the naïveté with which students try to impress deans with the total number of their units. One or two questions are sufficient to prove their slight acquaintance—that they have merely "taken" French or German.

The replies to the questionnaire make evident the fact that most deans of medical colleges recognize the insufficiency of the language requirement usually demanded of students for admission. To the question, Do you consider your modern language requirement sufficient to enable the average student to read foreign medical and scientific literatures? the following replies were received:

No	32
Hardly	2
Probably no	1
Not well	2
Doubtful	3
Yes, but inadequately	1
Haltingly only	5
Yes and no	10
Yes	18
No answer to the question or badly answered	5

Though generalization is impossible, this failure to acquire a reading knowledge of a modern foreign language is most often ascribed to the dearth of capable teachers in most high schools, and even in colleges. No

standards have as yet been generally established. The instructor often lacks training; his position in school is in many cases an accident; he is often a fairly cultivated foreigner who turns to teaching because he has found no other niche. Sometimes he is a native Englishman or American who has learned what he knows of foreign languages at school or college; often the same person is found teaching both German and French without knowing either well. English is still, as a rule, the language in which explanations are made and questions asked and answered. The instruction "succeeds" if the pupil can pass a written examination involving the translation into English of a short passage from a German or French classic, and answer in writing the sort of grammatical questions that appear on the Latin or Greek paper. The college or university teacher of modern languages is usually of higher quality; but the game has been lost before he takes a hand in it, and besides, the time at his disposal—one or two years—is insufficient.

Another important reason for the failure of American schools and colleges in modern language teaching is the relatively late age at which our students begin the study of foreign tongues. Most European boys and girls are more proficient in modern language study not only because secondary schools and colleges everywhere give them increased time in the newer programs, but also because they begin the study at an earlier age.

In America, therefore, for a variety of reasons the ultimate objectives of the two-year modern language course, which include the ability to read the language and use it orally within limits clearly defined, an interest in the history and institutions and ideals of the foreign country, and an increased curiosity about its literature and art, have not been met fully. The need of modern language study in American life is sufficiently attested, but the results show that this need is not fully satisfied by the courses now given.[4] It is fair to say that neither public nor educational opinion yet fully appreciates in the United States the great practical and cultural importance of foreign languages, or the fact that they can be learned only if begun early and taught competently.

It is largely because of the difficulty which most medical students and physicians experience in reading foreign medical and scientific literature that so few of them ever utilize it. This fact was established by the questionnaire. To the question, Does the average medical school graduate utilize his knowledge of French or German generally required of him for admission to medical schools? the following replies were received:

4. Fife, Robert H.: *A Summary of Reports on the Modern Foreign Languages.* MacMillan, New York, 1931, p. 38.

No	33
Only the exceptional	2
A good many do not	2
Very few only	6
To some degree	1
Some only	2
Only in translations	1
Probably not or questionable	4
Very little	2
I hope so!	1
Average doubtful; better graduates certainly	1
Some do; some don't	1
Many do	1
Yes	13
Don't know	3
Vague answer	1
No answer to the question	4

It is difficult to reconcile the above replies which clearly show that most students and physicians do not or cannot utilize the knowledge of French or German usually required of them for admission to medical schools with the answers to the following question which, in turn, shows that this language requirement is imposed largely because of its practical or professional value. To the question, Is your modern language requirement designed primarily for its practical or cultural value to the student? the following replies were received:

Practical value	35
Cultural value	13
Both practical and cultural values	18
No language requirement	3
Vague answers	5
No answer to the question	5

Many educators maintain that this inability on the part of medical students and physicians to read German or French scientific literature is not a serious handicap to their professional work. It is pointed out that until the outbreak of the World War, the medical practitioner who wished to keep abreast with the advances in medicine had to consult German and sometimes even French literature. But today so many excellent abstracts are published of the best medical publications printed in all languages, that there is hardly time to read them all. Translations and abstracts, they say, are readily available to those who cannot read the original articles so that it is no longer necessary for the physician to be able to read a foreign language to get needed information. Of course, the man who goes into research or academic work, should and must be able to read at least German papers in the original language in order to get the full worth of what

is printed, but such a man will take the necessary steps to prepare himself to do this, and we need not be concerned about him. The medical schools should not regulate requirements for him. He will take care of himself when the time comes for him. The medical student who is going into practice does not need to be proficient in either French or German.

Great Britain has long since recognized this fact. Students who begin the study of medicine on the basis of the requirement formulated by the General Medical Council are not required to have any acquaintance with either French or German; it is, indeed, possible to begin the study of medicine at the great universities—Cambridge, Oxford, or Edinburgh—without the ability to read either language. Of other medical students in England and Scotland, hardly 10 per cent are candidates for an arts or science degree, and probably know one or two languages.

It becomes clear that the present premedical requirement in French and German for admission to American medical schools is for practical purposes insufficient to give the student a working knowledge of the language in his medical studies so that their main benefit is cultural rather than scientific. It is important to note here that the language requirement in about one-half of the medical schools in the United States is designed, in part at least, for its cultural value. The question, therefore, may seriously be raised as to whether or not it would not be wise to permit a student to substitute one of the other Romance languages as a premedical requirement. In fact, it is maintained by some that more cultural value can be obtained from other languages than from either French or German. Greek and Latin have considerable value. Italian is the language of one of the great cultural races of the world, and besides, Italy has played a leading rôle in the development of both pure and applied sciences. Spanish, too, has much cultural value. The fact is that it is a mistake to state that any of the above modern foreign languages have more cultural value than the other; they have all played a significant part in making the world what it is today. The important thing is that the cultural value of foreign language study is not always sufficiently appreciated; indeed, culture as an asset to the future medical practitioner has gone into discard. And yet we can comprehend the wisdom and scientific accomplishment recorded in history of human effort only if we know something of human history, or the language of other people. Certainly, no one can claim to be educated unless he possesses a knowledge of one or more foreign languages.

The physician should first of all be an educated man, which implies a knowledge of modern languages and literatures; that is required by his position in the community and his relations to the patient and the patient's family. The continental nations take care of this point. The youth who

has attained his baccalaureate in France, or has graduated from an Italian *liceo,* or has won his leaving certificate in Germany, Switzerland, Denmark, or Sweden is respectably educated, in the technical sense of the word. And his school training is supplemented by what he inevitably gains from the rich cultural setting in which his life is cast. In America the situation is very different. The high schools and colleges are so lax, the cultural background and home environment are so meager, and tradition is as yet so ineffective that the physician is only occasionally an educated man.

Sir William Osler, in his *Evolution of Modern Medicine,* stresses constantly the importance of general culture to the physician, and points out that all through the history of medical men, the great leaders have devoted their lives to the saving of human souls as well as bodies, and that in order to be of real service to all men, the physician must know language, religious philosophy, some law, and must aim to be an outstanding member of the community in which he lives and works.

A fairly large number of medical schools are ready to adopt a modification in their modern language requirements. The replies to the questionnaire show that more than half of them are opposed to the French or German requirement. To the question, Do you oppose or favor the present tendency of requiring either French or German for admission to medical schools? the following replies were received:[5]

Favor retention of present tendency	18
Oppose present tendency	29
Neither favor nor oppose	5
Vague answers	17
No answer to the question	10

In fact, medical schools, generally, favor the placement of the principal modern foreign languages on an equal basis for admission to medical schools. To the question, Do you favor or oppose the placing of the principal modern languages on an equal basis so far as the requirement for admission to the medical schools of the United States is concerned? the following replies were received:[5]

Favor	48
Oppose	14
Indifferent	10
No answer to the question	7

There is one important advantage in placing the principal modern languages on an equal basis which is often overlooked. It is this. Generally speaking, an American student of German extraction who studies German, or an Italo-American youth who studies Italian will, because of their re-

5. The indirect replies received from some schools has made it necessary for the author to take the answers at their face value.

spective background and home environment, accomplish more in the study of the language of their fathers than can be hoped for in the case, for example, of an Italian boy who studies German.

Dean Herbert E. Hawkes of Columbia College has, perhaps, offered the best possible suggestion for the solution of this delicate and complicated problem, namely, that the premedical school requirements in foreign language be adaptable to the students' individual personality and requirements.[6] It is sincerely hoped that the officers in charge of admission to medical colleges will take this suggestion into serious consideration.

To recapitulate we may say:

1. While most medical schools in the United States and Canada recommend or urge a reading knowledge of German or French for admission, there are many that will accept other modern languages on an equal basis. No less than fifteen schools have no language requirement at all.

2. Medical schools usually prefer German or French chiefly because of the medical and scientific literatures in those languages.

3. The knowledge of French or German usually possessed by premedical students is insufficient to enable them to read scientific papers in those languages.

4. Most medical students and physicians fail to utilize their knowledge of French or German, despite the fact that this requirement is usually designed for what is supposed to be of practical or professional value to the student and physician.

5. Translations and abstracts of foreign medical literature are sufficient for the needs of the average practitioner.

6. Research workers and academic men will acquire whatever knowledge of French or German they may need for their work.

7. The main benefit of modern language study is cultural rather than scientific or professional. Therefore, Italian and Spanish should be placed on the same basis as other modern languages for admission to medical schools. Greek and Latin are also culturally important.

8. The modern language requirement for admission to medical schools should be adapted to the students' individual personality and requirements.

6. Hawkes, Herbert E.: Cooperation between the college and the medical school. *Jour. Ass'n Amer. Med. Colleges*, May, 1930.

What Should the Teacher Keep in Mind in the Instruction of Medical Students

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In a school of medicine in which there is a large faculty whose primary interests are in the study and practice of their particular branch, it seems important to keep before the members the subject of the art of teaching. For this purpose we have used many means of presentation. Among them have been addresses by men from the department of pedagogy of the University, reports and discussions of the programs of the Association of American Medical Colleges, teaching plans of individual departments in the medical school, in addition to utilizing every opportunity of emphasizing this phase of the work of the faculty. This year it was decided to use the ideas of the faculty as a whole, with the belief that the individual members of the faculty would accordingly give greater thought to the subject and that its presentation would have added weight through their knowledge that the ideas were coming from themselves. A question was therefore distributed requesting that each man, without previous discussion with other faculty members, send to this office a statement of "the two things which you think most important for a teacher to keep in mind or for a teacher to do in the instruction of medical students." The question itself was purposely stated so that its meaning, as well as a reply to it, would require some thought. The replies received were most gratifying inasmuch as they gave evidence in most instances of a clear insight into the fundamentals of the teaching art. As might be expected these replies were, in general, applicable to teaching in any professional school. Although expressed in different manners the same concepts occurred repeatedly.

For purposes of study and discussion the ideas expressed were grouped in eight main divisions, each of which contained two or more subheadings —these subheadings being variations of the group thought. It is interesting to note that the first three groups contain by far the majority of ideas. In these are collected replies concerned with the development in the student of accurate thinking processes, of which there are forty-one; replies concerned with the student mind and the student-teacher relationship, of which there are forty-five; replies concerned with the teacher's fund of knowledge, of which there are twenty-six. The thoughts expressed in these three groups are in themselves sufficient to insure good teaching. However, in the fifth group, replies concerned with the extent of information presented,

there are twenty-eight. Of these, fifteen bring out the importance of teaching fundamental principles. The remaining thoughts in this group are certainly worthy of consideration. It was interesting also to note that ten are grouped as replies concerned with the art of medicine.

In order that all of the members of the faculty might have the privilege of knowing the variety of ways in which these ideas were expressed, excerpts from a number of the letters were copied and sent to all members of the faculty.

SUMMARY OF REPLIES

Replies concerned with the development in the student of accurate thinking processes:
- Teach students to think 26
- Correlation of material 12
- Encourage reading 3

Replies concerned with the student mind and the student-teacher relationship:
- Keep within the student's present training 7
- Know students 13
- Individual attention 3
- Ability to place oneself in position of student 11
- Interest and enthusiasm 11

Replies concerned with the teacher's fund of knowledge:
- Know your subject well 24
- Be thorough 2

Replies concerned with the importance of focusing the attention of student on subject matter rather than on the teacher:
- Magnify interest in subject, not your own knowledge 3

Replies concerned with the extent of information presented:
- Teach fundamental principles 15
- Consider commoner things before the rare 3
- Teach accepted ideas only 1
- Be sure to give one accepted form of treatment 1
- Be practical 2
- Teach facts not theories 2
- Ride no hobbies 1
- Stress therapeutics 1
- Get details 2

Replies concerned with the art of medicine:
- Medicine an art not a trade 3
- Consider the patient as well as the disease 3
- We are dealing with human beings 1
- Consider the psychology of the patient 2
- Cultivate the spiritual side of the student 1

Replies concerned with the related objectives of medical teaching:
- Teach common honesty 3
- Character training 1

Replies concerned with other factors related to teaching:

Be sure one thing is taught during the hour	1
Be prompt	8
Be sincere	1
Be brief	1
Teach by precept	2
Check student's acquisition (quiz)	3
Repetition	3
Clearness and simplicity	4
Speak slowly and clearly	1
Always assign lesson	1
Consider the healing power of nature	1
Teach from standpoint of history of medicine	1
Be tolerant of viewpoints of others	1
Make general practitioners	5
Fault is ours if we fail	2

EXCERPTS FROM REPLIES

1.—The teacher should aim to develop a scientific attitude of mind in the student. I believe that a lecture can be presented in such a way as to make a student think for himself. By thinking for oneself we, of course, mean correct or logical thought processes that lead to valid conclusions. A good lecturer, in my opinion, is one who teaches the student indirectly the principles of inductive and deductive reasoning.

2.—Give a student more clinical responsibility with a review by the instructor of his conclusions and his method of arriving at such conclusions, pointing out errors of reasoning.

3.—Arouse in his students by his teaching a curiosity to know more about the subject and an interest in the subject that will act as a stimulus long after the course is done.

4.—No finer method of teaching has as yet been devised than the Socratic method; that is, to lead the idea out of the student by appropriate questioning. It requires more patience of the teacher, but it impresses facts and methods upon the student.

5.—The teacher should attempt to inculcate in the student an attitude of carefulness and accuracy in laboratory manipulation, mental alertness, and the ability to marshall facts and from them draw a conclusion. He should not attempt to place the greatest possible number of bare facts before the student and try to make him remember them.

6.—Teach the student to think, to reason problems out for himself and to do things for himself because no one ever really knows a thing until "they do it with their own hands and with their own brains."

7.—Make the subject interesting. Give the student a chance to think and express himself, and then make corrections.

8.—The teacher should attempt by careful consideration and thought to present his subject to the student in such manner as not only to arouse his interest, but also to instill the desire to become thoroughly familiar with it. To do this it must be shown the student wherein lies the importance of his mastery of each division of the subject and wherein his usefulness as a physician will be increased by such study. The medical student has time and patience only for those phases of a study which he feels will aid him to become a better practitioner.

9.—The first duty is to facilitate the acquistion of necessary facts by the student. To fulfill this, I believe the instructor must have a clear conception of the

relationship which his particular course of study bears to the whole objective. He must never believe that the significance or importance of his subject eclipses or transcends that of the main objective. If he does, he may tend to develop pharmacologists, anatomists, etc., and not be contributing to the development of the practicing physician.

10.—Make the boy *think:* make him see the relationship of what he learned in his preclinical years to the case in hand—explain various phenomena observed in terms of basic principles of embryology, histology, gross anatomy, physiology, pathology, etc.; make him think what end he wishes to achieve in treatment, and what medication will do that and how.

11.—Keep in mind the difference in viewpoint of student and teacher as based on experience, etc. Do not take for granted that the student has basic knowledge of the subject and go directly into advanced details.

12.—Adopt the attitude of being truly interested in the problems which arise in the minds of the student. To appear really interested and painstakingly to assist in the analysis of the problems, even though they may be simple, is a great incentive to thoroughness and zeal of study on the part of the student.

13.—Remember that medical students are embryo doctors; their minds are open and eager to learn, and the impressions and facts obtained at this period of their development are most lasting. The responsibility of his work in the future depends, largely, upon the attitude of and the instruction received from his professors.

14.—Patience with his pupils. By patience, I wish to imply that things which seem simple and self-evident to the school physician are complex to the student or pupil, and that various pupils have slower working minds than others, and that discretion and indulgence must be exercised in dealing with the average medical student.

15.—The second factor to be considered, in my opinion, is that the student has other subjects to be learned and the man who attempts to make a specialist of each of his students in the field he practices, thereby attempting to cover the entire field in detail in the course of a few lectures, will find that most of the information he gives has passed over the student's head and has given little benefit. A few basic principles, well fixed in the student's mind, will be of much greater value than a wide generalization which is quickly forgotten.

16.—A teacher should know his subject. Students soon lose interest in a talk given by a man who flounders around, repeats, and is uncertain about what he is saying.

17.—Simplicity and forcefulness in presenting his subject matter with an effort at all times to stress the importance of the *subject* which is being taught rather than an attempt on the part of the teacher to exhibit his particular knowledge of the subject.

18.—In the medical school of today where time is so limited and material to be given so voluminous, there is a tendency toward the giving of fact and information only. Since a medical student is to be a detective, a detective of disease, a diagnostician, an aid to nature in healing, he must be taught in the way of the true scientist. He must be taught to know how and when to be meticulous, how to make unbiased observations and that a conclusion should be reached only after all aspects of a subject have been considered.

19.—In presenting a medical or surgical subject, a general survey of the subject should be given with a summary of the various theories or plans of treatment applicable to a given subject, but a concise and detailed plan of one form of treatment should be given for each disease, one that has been tried and proven to be satisfactory, so that the student may have a clear-cut idea of at least one good plan of treatment for the given condition. Later, after clinical experience of his own, the student can evaluate the various plans of treatment, and decide which is best suited for his needs and ability.

20.—Teach them that medicine is also an art, that they are dealing with

human beings and not machines, and that their success depends not only on their knowledge but also on their integrity.

21.—Teach the student that he is coming into a profession in which every man should always remember that there is a difference in him who practices an art and in him who drives a trade.

22.—The teacher should so conduct himself that the students will respect him. That includes promptness, knowledge of his subject, kindness, consideration of the students' wishes as far as possible for good work.

23.—It would seem well for the teacher to remember that a medical student is the greatest of imitators. He thinks, he acts, and he believes as does his trusted teacher. Therefore, it is imperative that the teacher speak clearly and accurately, just as it is important that his examination of the patient be as nearly faultless as is possible.

24.—A few years ago while interning in Boston, Massachusetts, I had the pleasure of meeting Dr. Harvey Cushing and was shown through his apartment in the Peter Bent Brigham Hospital. I was struck by his intense interest in medical history. Commenting to him upon my observation, I found that it was his belief that a medical student would have his interest stimulated more deeply by delving into the medical history of the separate diseases which he was studying than in any other way. I would like to make this as one of my suggestions for a most important thing for a teacher to keep in mind.

25.—A teacher of students of medicine should keep in mind that he has a distinct responsibility as an example of a fine type of medical man as well as a responsibility of molding the individual mind of each student into a well rounded physician. His conduct within and without the class room should be such that each student would desire to emulate him.

26.—I believe the chief function of a medical school is the training of practicing physicians. If this be true, then the important thing for the instructor to keep in mind is to teach the student practical knowledge so that he may be able to take it to the bedside of the patient. I believe it is equally important to inculcate in him the necessity of common honesty in dealing with patients. In short, the Golden Rule.

27.—Besides acquainting the students with the well established facts of his science, the teacher should impress upon them the limitations of present day knowledge and arouse their interest in what is being done in research laboratories. Although the students themselves may never contribute anything in the way of research, they will, at least, realize the importance of keeping abreast of the latest developments in the medical sciences. They should be made to read the various scientific journals in the hope of cultivating the "habit" of referring to current medical literature.

28.—Interest in cultivating the spiritual side of the student by leadership, example, inspiration, like Osler in his rôle of "senior student." The goal is not to teach medicine but to assist the student to prepare himself for the pursuit of an arduous profession. His success will depend upon two major factors, the intellectual and the spiritual. These two phases of the personality are "powered" by the dominant motive which is usually self interest. Emphasis on marks, "passing," etc., pitches the dominant motive at a low level—all effort is to "get by." Things which do not obviously promote this "passing" are of no value to the student; hence, are disregarded. The spiritual phase of a physician's equipment is often the decisive factor in success. It is not provided for in the curriculum and may even be stifled in a blind pursuit of marks.

29.—When we do not get the subject across, we should look for the fault in ourselves and not the student.

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The Nashville Meeting

The forty-fifth annual meeting of the Association is now history. It will long be remembered as one of the most outstanding meetings from every point of view. The attendance was the second largest in the history of the Association and the most enjoyable. The local arrangements were perfect. The meeting places were most satisfactory. The social pleasures provided were enjoyed to the utmost—in large measure because of the efforts of the local ladies who contributed freely of their time and provided opportunities which gave a very high degree of pleasure and added greatly to the success of the meeting.

The program was an excellent one. It received unanimous approval from all sides. The interest and enthusiasm of the delegates was maintained from the beginning of the first session to adjournment. The business of the Association was disposed of with dispatch and to the utmost satisfaction of the delegates.

The following officers were elected: President, Ross V. Patterson; president-elect, John A. Wyckoff; vice-president, Thurman D. Kitchin; secretary, Fred C. Zapffe; treasurer, B. C. H. Harvey. Executive Council, H. G. Weiskotten and C. W. M. Poynter, the former succeeding himself and the latter having served last year as vice-president.

Committee on Educational Policies: E. S. Ryerson, chairman; John A. Wyckoff, Alan M. Chesney, C. R. Bardeen and Harold Rypins.

Committee on Aptitude Test: Torald Sollmann, chairman; F. A. Moss, E. A. Koch, Beverly Douglas and J. Parsons Schaeffer.

Delegates to the National Advisory Council on Medical Specialties: Louis B. Wilson and W. C. Rappleye.

Toronto was selected as the place of meeting in 1935—October 28, 29 and 30.

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Acceptable Accrediting Agencies

The question has often been asked as to which of the agencies setting up lists of approved colleges and universities are acceptable to the Association of American Medical Colleges. The question was discussed at a meeting of the Executive Council and it was voted to accept the lists prepared by the Association of American Universities; Middle States Association of Colleges and Secondary Schools; New England Association of Colleges and Secondary Schools; North Central Association of Colleges and Secondary Schools; Northwest Association of Secondary and Higher Schools; Southern Association of Colleges and Secondary Schools, and also the colleges approved by a state university.

The constitution of the Association provides that any medical school may accept a student coming from an unapproved arts college but requires that it send a record of that fact to the office of the Association. The Council on Medical Education and Hospitals of the American Medical Association approves of this arrangement.

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Dr. Bachmeyer Succeeds Dr. Houghton at University of Chicago

Dr. Arthur C. Bachmeyer, nationally known hospital executive, has been appointed Director of the University Clinics of the University of Chicago to succeed Dr. Henry S. Houghton, who has re-

signed to return to China as advisory representative of the China Medical Board, which owns and supports the Peiping Union Medical College. Dr. Houghton's resignation and the appointment of Dr. Bachmeyer become effective January 1, 1935.

Dr. Bachmeyer has been Dean of the College of Medicine of the University of Cincinnati for the past ten years. He is most widely known, however, as an exceptionally able hospital executive, because of his achievements in directing four of Cincinnati's leading hospitals. For twenty years he has been the superintendent of the Cincinnati General Hospital, which under his direction has achieved an enviable rating among American teaching and service hospitals. He also has been administering with equal success the Tuberculosis Hospital, the Children's Hospital, and the Christian Holmes Memorial Hospital.

A past president of the American Hospital Association, Dr. Bachmeyer has been widely sought as a consultant in problems of hospital design and organization.

Dr. Houghton has been Director of the Clinics since January 1, 1933. He came to the University of Chicago from the Medical College of the University of Iowa, of which he was Dean, but most of his career had been spent in the Orient. He was for six years associated with Wuhu General Hospital, Wuhu, China, becoming Dean of the Harvard Medical School of China at Shanghai in 1911. From 1918 to 1928 he was Director of the Peiping Union Medical College. At present a director of the China Medical Board, he is resigning that position to become the Board's representative in Peiping.

◆ ◆

American Students in Medical Schools of Great Britain

Since the Fall of 1930, applications made by Americans for admission to the medical schools of Great Britain have been sent by the General Medical Council to the secretary of this Association for evaluation, as an individual. At the 1933 meeting of the Association the secretary was authorized to act in his official capacity.

In 1930, more than 600 such applications were received. The largest number coming from one school—the University of Edinburgh—was 228. Very few of these applications would have been considered by any of the American medical schools. In fact, many of the applicants had been refused admission by one or more of our medical schools.

In 1931, the number of applications fell off considerably. Only 128 were received. In 1932, the number was 113. But in 1934, up to the time of going to press, 151 applications have been received, about 35 per cent more applications than were received in 1933. The reason therefore is not apparent. There is not any improvement in the credentials submitted nor in the scholastic attainments of the applicants. The restrictions imposed on graduates of foreign medical schools who seek licensure in this country have not been abrogated, yet the exodus is becoming greater.

In a recent issue of the *Journal of the American Medical Association* (Aug. 25, 1934) are published the data on the enrollment of American students in foreign medical schools. Of the total of 1428 students enrolled in all countries, 401, or 29 per cent, were enrolled in the medical schools of England, Scotland and Ireland (none in Wales). But 333 of the 401 students, or 83 per cent, were enrolled in the seven medical schools of Scotland. St Andrews headed the list with 83 students. Only 4 students were enrolled in Ireland and 64 in England. Forty-five students completed the course, 46 of these at St. Andrews.

It would be interesting to know how many of these graduates return to this country seeking licensure.

College News

University of Chicago
Division of Biological Sciences

Dr. Henry S. Houghton has been prevailed upon by the China Medical Board to return to China as its advisory representative. This Board, which is financed by Mr. Rockefeller, owns and supports the Peiping Union Medical College in Peiping, China.

Dr. Houghton was Acting Director of the Peiping Union Medical College from 1918-21, and Director from 1921-25, when he resigned to return to the United States after twenty years spent in China. Because of his intimate knowledge of the situation in China, the China Medical Board has persisted in urging him to return there.

Dr. Arthur C. Bachmeyer has been appointed Director of the University Clinics to succeed Dr. Houghton.

The new director has been Dean of the College of Medicine of the University of Cincinnati for the past ten years.

Five years ago the Rockefeller Foundation made a grant of $30,000 a year for five years to the University for the support of biological research.

A committee under the chairmanship of Dr. Taliaferro was appointed by the President's Office to administer this fund. During the period it was the constant aim to finance long term projects which were thus assured of continued support throughout a period of depleted departmental funds. A few emergency grants were made to foster special studies for which additional funds were essential.

For the current year, the Rockefeller Foundation has increased its grant to $50,000 so as to cover in addition the expenses of the Sex Research program. This program was started by Dr. Lillie in 1923 with the assistance of Dr. Moore, sequent collaboration of the Department Dr. Domm and Dr. Juhn with the sub- of Physiological Chemistry under Dr. Koch's direction. The direct grant from the Rockefeller Foundation replaces the support hitherto given by the Committee on Research in Problems of Sex of the National Research Council.

The University Health Service has been equipped with new fluoroscopic machines so that now an initial chest examination may be made of each entering student this Autumn quarter.

Dr. Carl M. Marberg who has been working as Assistant Professor of Chemistry in the Department of Pathology is transferring his work to the Department of Chemistry beginning October 1, and is resigning his Sprague Institute appointment.

Dr. Harold O. Wiles is being appointed as an Instructor in Chemistry in the Department of Pathology under the Otho S. A. Sprague Memorial Institute to replace Dr. Marberg. He will continue the special research which Dr. Marberg has been carrying on concerning the concentration of the active agent of liver extract for use in pernicious anemia and on the use of bone marrow in the treatment of agranulocytosis.

Dr. Myron M. Hipskind is promoted to the rank of assistant resident in otolaryngology, October 1.

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Jefferson Medical College

The One Hundred and Tenth Annual Session was inaugurated September 24, 1934.

Mr. Alba B. Johnson, President of the Board of Trustees, presided. The Introductory Lecture was delivered by Dr. Thomas C. Stellwagen, professor of

genito-urinary surgery, on "Cooperation and Loyalty."

Dr. Ross V. Patterson, Dean, welcomed the 562 members of the student body. The new students consisted of 148 Freshmen and 16 Juniors.

The members of the first-year class were prepared for medical study in 62 institutions and all have received collegiate degrees.

Among the members of the Class are sons of 7 Jefferson graduates, together with 6 other relatives of Jefferson graduates. There are 7 other sons of physicians, not graduates of Jefferson Medical College.

Geographically, 18 states and insular possessions are represented, as follows: Maine, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, West Virginia, Ohio, North Carolina, Massachusetts, Georgia, Kansas, Wyoming, Tennessee, Utah, Hawaii, Puerto Rico.

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Cornell University Medical College

Dr. W. S. Ladd has been appointed acting dean during the absence of Dr. G. Canby Robinson, who has been granted a year's leave of absence.

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College of Medical Evangelists

Dr. Llewelyn C. Kellogg was born September 6, 1875, and died in Loma Linda, California, September 1, 1934, being five days less than 59 years of age. His early professional life was devoted to teaching in and superintending public schools. He entered the study of medicine at the age of 43. After graduating from the College of Medical Evangelists in 1922, he entered the employ of his Alma Mater and gave the remainder of his life to the work of that institution, most of his time being devoted to the teaching of anatomy. He was a man of unusual ability along this line, and his loss is keenly felt by the institution, as well as by relatives, associates, and students.

In addition to being a good teacher, he was also a gifted speaker and possessed considerable literary ability.

His death was very sudden, being caused by coronary occlusion.

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University of California Medical School

October 10, 1934, Dr. Frank B. Young of Long Beach, California, addressed the faculty and students on "The Antiquity of Diseases". Dr. Young's talk was illustrated with a collection of paleo-pathological material including original specimens, x-rays, photographs and drawings.

October 13, 1934, Dr. Robert F. Loeb, associate professor of medicine, Columbia University School of Medicine, held a clinic on "Diabetic Acidosis", which was attended by the Faculty and students.

Friday, November 23, 1934, the annual alumni day will be held at the San Francisco Hospital. The morning session will be devoted to ward rounds, operative clinics, conferences and demonstrations and the afternoon to a symposium on the autonomic nervous system in its relation to medicine and surgery.

Dr. Bernard Myers, president of the Clinical Section of the Royal College of Physicians of London, England, will address the faculty and students at 12 noon on Monday, December 10, 1934, in Toland Hall, University Hospital, San Francisco, on "Essential Purpura Haemorrhagica."

Postgraduate sessions in medicine are to be given in five districts in the state by the medical school. The centers in which the meetings are to be held are Sacramento, Santa Rosa, Fresno, Eureka, and San Jose. These sessions are designed to carry the newest knowledge developed in medicine and surgery to the practicing physicians of the state.

Each divisional group is organized, and is represented by the leaders of the profession. A district committee chair-

man is in constant contact with the director of the University of California Hospital Outpatient department, who directs this extramural teaching. The local meetings are held on alternate Fridays and Saturdays of each month of the teaching year. Members of the medical faculty of the University of California Medical School are in charge of these Friday meetings when the anatomy, physiology and pathology of the conditions involved is studied. For these sessions illustrative material, as slides, films, charts, gross specimens, and models are available from the University Medical School's collection. This first meeting of the session thus lays a foundation for the full discussion of diagnosis and treatment reserved for Saturday's deliberations.

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University of Oregon Medical School

Dr. Edward S. West has been appointed professor of biochemistry. He came from Washington University, St. Louis, where he formerly held the position of associate professor of biochemistry. Doctor West succeeds Dr. Howard D. Haskins, who died several years ago.

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Rush Medical College University of Chicago

Dr. Vernon C. David, clinical professor of surgery, has been appointed chairman of the department, succeeding Dr. Arthur Dean Bevan. Dr. Bevan will continue with his work at Presbyterian Hospital and at Rush as Nicholas Senn professor of surgery.

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New York University University and Bellevue Hospital Medical College

Dr. Frederick Clark Holden, who has been associated with the Medical College since 1919, has retired as professor of obstetrics and gynecology and has been appointed professor emeritus. Succeeding him, Dr. William Emery Studdiford has been promoted from associate professor to professor of obstetrics and gynecology, the appointment being effective September 1, 1934.

In the Department of Pharmacology, Dr. Richard Charles Bodo has been promoted from assistant professor to associate professor.

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Johns Hopkins University School of Medicine

Dr. Ludwig Edelstein, formerly of the University of Berlin, has been appointed associate in the history of medicine. Dr. Edward H. Hume, New York, will give the Noguchi lecture and Dr. Pasteur Vallery-Radot, Paris, the Thayer lecture during the coming year.

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University of Buffalo School of Medicine

Fred R. Griffith, Jr., Ph.D., professor of physiology, has been appointed head of the department to succeed Frank A. Hartman, Ph.D., who resigned to go to Ohio State University College of Medicine.

Dr. Herbert U. Williams, professor of pathology, has retired after more than fifty years' service.

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Creighton University School of Medicine

Dr. Victor E. Levine, professor and head of the department of biological chemistry and nutrition, and Charles W. Bauer, A.M., professor of chemistry in the University, are spending four months in Alaska in a study in Eskimo children. The investigators are making physical measurements and determining the nutritional status and basal metabolism of the children. Quantitative studies of the children's blood for inorganic constituents are being made and their susceptibility to tuberculosis, diphtheria and scarlet fever is being tested.

Vanderbilt University School of Medicine

In July the University authorities published two volumes comprising the lectures delivered under the auspices of the Abraham Flexner Lectureship by Sir William B. Hardy and Dr. Francis R. Fraser.

The second series of the Abraham Flexner Lectures were delivered at the School of Medicine in 1931 by Sir William B. Hardy. The preparation of Sir William Hardy's notes for publication were delayed by illness, and at his death in January, 1934, the manuscript of only two essays had been completed. These are presented in the volume entitled, "To Remind: A Biological Essay."

The third series of lectures were given by Dr. Francis R. Fraser in 1933. The volume presenting these lectures is entitled, "Principles of Therapeutics."

Both volumes have been published by the Williams and Wilkins Company of Baltimore.

Promotions: Dr. Seale Harris Jr., associate professor of medicine; Dr. J. C. Peterson, instructor in pediatrics; Dr. W. Carter Williams, instructor in preventive medicine and public health; Dr. Jack M. Wolfe, assistant professor of anatomy; Dr. Harold Klingler, instructor in obstetrics and gynecology; Dr. Ralph M. Larson, instructor in surgery, and Dr. Edna S. Pennington, instructor in clinical medicine.

New Appointments: Dr. Earl Bowerman, Dr. Robert T. Terry, Dr. William Fleming and Dr. Felix Corlette, assistants in medicine; Dr. Ogden C. Bruton and Dr. William R. Sandusky, assistants in pediatrics; Dr. Thomas C. Butler research assistant in pharmacology; Dr. Leland M. Johnston and Dr. George S. Mahon, assistants in pathology, Dr. Tandy C. Rice and Dr. W. Val Sanford, assistants in preventive medicine and public health; Dr. Morton F. Mason, instructor in biochemistry and research assistant in medicine; Dr. Elbridge Anderson, assistant in clinical obstetrics; Dr. John W. Simpson and Dr. Robert Sory, assistants in obstetrics and gynecology; Dr. Henry M. Carney, assistant in surgery; Dr. Bernard M. Weinstein, assistant in radiology, and Mr. Clay M. Greer, research assistant in pharmacology.

Col. Fielding H. Garrison, M.D., Librarian of the William H. Welch Memorial Library at Johns Hopkins University, addressed the students and faculty, October 18, as a feature of the regular course on the History of Medicine. His subject was "Life as an Occupational Disease."

Dr. C. Sidney Burwell, professor of medicine, delivered the Cutter Lecture on Preventive Medicine at the Harvard Medical School on November 8. His subject was "The Prevention or Postponement of Death from Heart Failure."

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University of Colorado School of Medicine

Under a grant of the Rockefeller Foundation to the Colorado Psychopathic Hospital, Dr. Edward G. Billings has been appointed director of the liaison work between the departments of medicine and psychiatry in the Colorado General Hospital and assistant professor of psychiatry.

The grant was made to further educational and clinical activities and to effect a closer relationship between psychiatry and general medicine. A five-year demonstration period is anticipated.

Other new psychiatric appointments include Dr. Clarke H. Barnacle as resident psychiatrist at the psychopathic hospital, to succeed Dr. William M. Peake, who resigned to become assistant professor of psychiatry at the University of Cincinnati Medical School. Drs. Jack R. Ewalt, Henry W. Brosin and Philip H. Hearsema have been awarded fellowships in

psychiatry at the hospital by the Commonwealth Fund.

A liaison service has been established in the University of Colorado School of Medicine, between the Colorado Psychopathic and the Colorado General Hospitals. Dr. Edward G. Billings (Indiana University School of Medicine, 1928) has been appointed to direct this work, with the rank of Assistant Professor of Psychiatry. The establishing of this service has been made possible by a grant from the Rockefeller Foundation.

Appointments and promotions: David L. Dial, B.A., M.D., instructor in pathology; Herman I. Laff, B.A., M.D., instructor in otolaryngology; Clarke H. Barnacle, M.D., instructor in psychiatry.

Dr. Oscar M. Gilbert, associate professor of medicine, has resigned from active service. In recognition of Dr. Gilbert's long and efficient work, he has been granted the rank of professor of medicine, emeritus. He has been connected with the School of Medicine in both teaching and clinical capacities since 1900. Dr. Thomas Donald Cunningham, assistant professor of medicine, has resigned. Dr. Isadore David Bronfin, assistant professor of medicine (tuberculosis), died of tuberculosis, July 31, 1934.

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New York Post-Graduate Medical School

An affiliation between the New York Post-Graduate Medical School and Hospital of Columbia University and the Stuyvesant Square Hospital was made effective September 1. Under the agreement, the Stuyvesant Square Hospital will maintain its identity. Membership of the board of directors of the graduate hospital will be extended to include members of the present directorate of the Stuyvesant institution. The latter will retain the control of its capital funds, including any funds subsequently received by gift or bequest for maintenance or endowment of beds, while the graduate hospital will take over the management and maintenance of buildings and equipment and the general administration of the hospital, funds for which are provided from the income of the Stuyvesant Square Hospital.

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Meharry Medical College

Dr. Rafael Hernandez, professor of neurology and psychiatry, spent six additional weeks of post-graduate studies in clinical neurology and psychiatry at the New York Polyclinic Hospital and the Gouverneur Hospital, a unit of Bellevue System in New York. Out-patient and bedside work was done under Dr. Rosenbluth (Neurologist) and Dr. Leber (Psychiatrist).

Dr. H. S. Shoulders has recently been appointed professor of radiology to take the place of Dr. C. E. Dillard who resigned to go into the practice of medicine in Cincinnati. Dr. L. D. Scott has received the appointment of assistant professor of radiology.

Dr. R. T. Smith, who for the past year has served as house physician and assistant professor of medicine, has recently been appointed Chief of Dispensary or Outpatient Division and Admission Officer.

Dr. C. V. Roman, emeritus professor of ophthalmology and otolaryngology, and professor of history of medicine, died rather suddenly on August 25. Dr. Roman had just written "The History of Meharry Medical College," which had just come off the press about a week before his death. In point of service he was one of the oldest members of the Meharry faculty.

Dr. J. A. Lester, emeritus professor of physiology and for many years registrar of Meharry Medical College, died September 27. He was probably the oldest teacher in point of service.

Both Dr. Roman and Dr. Lester lived long and useful lives, and they will be missed by students and faculty.

Dr. W. S. Quinland, professor of pathology and associate medical director of the George W. Hubbard Hospital, has just returned from a visit to Panama, where he and his family went to visit his parents. While in Panama Dr. Quinland visited the various hospitals.

Dr. William Watson, a graduate of the Dental Class of 1933, who has completed one year of internship at Forsyth Dental Infirmary for Children, has been appointed a teacher in the Dental School. Dr. Watson was an honor student at Meharry, making over 90% for his four years of training. He also made one of the highest averages on the State Dental Board Examination.

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University of Illinois College of Medicine

Dr. A. R. Moore, professor of general physiology at the University of Oregon, who has recently returned from Sendai, Japan, where he was Rockefeller visiting professor of physiology, delivered a series of lectures from October 15 to 20 under the auspices of the Graduate School. The lectures were on the "Physiological Basis of Individuality in the Early Embryo and in Elementary Forms"; (1) The cytoplasm as a biophysical system; (2) Special cytoplasmic structures; (3) Integrative mechanisms. The individual in motor reactions of simple forms; (4) Phylogenetic beginnings of the central nervous system; (5) Modifiability of reactions.

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University of Alabama School of Medicine

Dr. James S. McLester, Professor of Medicine at the University of Alabama and President-Elect of the American Medical Association, delivered the annual Gorgas address before the La Fayette Guild Chapter of the Gorgas Medical Society at the University of Alabama on October 3. His subject was "The Drifting Sands of Medical Practice." The occasion was in commemoration of the 80th birthday of William Crawford Gorgas.

Dr. John Howard Ferguson has been appointed assistant professor of physiology and pharmacology. Dr. Ferguson is a native of Scotland, B. A., University of Capetown, M. A., Oxford, M. D., Harvard. He was assistant to the professor of bacteriology at the University of Capetown, 1928-31, and instructor in physiology in the Yale School of Medicine, 1931-34. He replaced Dr. Gene H. Kistler who was transferred to the Department of Bacteriology and Pathology as associate professor. Dr. Kistler is a graduate of Rush and last summer was awarded the Chicago Medical Society Prize of $500 for research in "Formation of Bone by Periosteum After Experimental Infarction by Embolism of Femur in Rabbits."

Dr. Albert Sidney Harris has been appointed instructor in physiology and pharmacology. He is a graduate of the University of Alabama and last June took his Ph. D. in physiology from Washington University. Dr. Harris replaces Miss Marie C. D'Amour, Ph. D., who resigned to study medicine at her home in Colorado.

Dr. James Bowron McLester has been appointed clinical assistant in medicine. Dr. McLester received his A. B., Alabama, 1926; M. D., Harvard, 1930.

Dr. Edgar Gilmore Givan and Dr. Cecil Cullen Belcher have been promoted to clinical instructor in medicine. Dr. Givan received his A. B. from Alabama in 1924 and his M. D. from Jefferson in 1928. Dr. Belcher received his B. S. in pharmacy from Alabama Polytechnic Institute in 1926 and his M. D. from Tulane in 1930.

William Kendrick Hare, A. B., Alabama, 1930, who finished his first two years in medicine at Alabama has been awarded the fellowship in neuro-anatomy

at Northwestern and is pursuing work for a Ph. D. degree.

Dr. Allen Walker Blair has resigned as associate professor in pathology and bacteriology to accept a surgical appointment in the Winnipeg General Hospital.

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New York Homeopathic Medical College

Through the death of Mrs. Davis, the balance ($50,000) of the bequest of the late Dr. John E. L. Davis becomes available.

The income from the Ella V. von E. Wendel bequest now becomes available through an arrangement by which the management of the estate is given over to a committee of the beneficiaries. Each of the legatees may now receive annually their share of the income from the estate.

The New York Homeopathic Medical College and Flower Hospital is entering on its seventy-fifth year since the charter was granted in 1860. The Board of Trustees has designated June, 1935, as the time for formal celebration of the anniversary. Professor Lindsley F. Cocheu has been appointed chairman of the committee on arrangements.

Dr. William Salant, Director of Cold Spring Harbor Biological Institute, has been elected guest professor of pharmacology at the New York Homeopathic Medical College and Flower Hospital.

Dr. Karl Kötschau, formerly guest professor of pharmacology at the same institution, has been made professor of biological medicine at the University of Jena.

Opportunity for clinical teaching at the Metropolitan Hospital has been facilitated for the students of the College by increasing the number of clinical teachers receiving compensation.

October 4, Dr. Joseph H. Fobes addressed the student body on "The Evolution of a Surgeon."

October 11, Dr. Louis Réné Kaufman spoke on "The Foundation of Medicine."

Duke University School of Medicine

October 1, Duke University School of Medicine, began the autumn quarter, with a total of 194 students.

October 12 and 13 a postgraduate course in fractures was held at Duke Hospital by Dr. Alfred R. Shands, Jr. Lectures and demonstrations were given by the following: Dr. Philip D. Wilson, New York City; Dr. William M. Roberts, Gastonia, N. C.; Dr. Oscar L. Miller, Charlotte, N. C.; Dr. H. Earl Conwell, Fairfield, Ala.; Dr. F. A. Hoshall, Charleston, S. C.; Dr. J. Warren White, Greenville, S. C.; Dr. J. T. Saunders, Asheville, N. C.; Dr. Hugh Thompson, Raleigh, N. C.; Dr. G. W. Leadbetter, Washington, D. C.; Dr. Raymond S. Crispell, Duke Hospital, and Dr. Walter F. Cole, Greensboro, N. C. In addition, many fractures, braces and splints were exhibited. More than 300 from North and South Carolina and Virginia attended.

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University of Georgia School of Medicine

New appointments to the full time faculty include the following:

Dr. Sam M. Brock, professor of surgery; Dr. Evans B. Wood, assistant professor of gynecology and obstetrics; William F. Hamilton, Ph.D., professor of physiology and pharmacology; Everett S. Sanderson, Ph.D., professor of bacteriology and public health; Fred A. Mettler, Ph.D., assistant professor of anatomy; W. R. Brown, assistant professor of chemistry; Robert A. Woodbury, Ph.D., assistant professor of physiology and pharmacology; Robert B. Dienst, Ph.D., assistant professor of bacteriology and public health.

The new wing of the University Hospital, named for Milton Antony, who founded the school in 1828, was made possible by a grant from the Public

Works Administration and by funds contributed by the Alumni Association, the city of Augusta and the county of Richmond. It will have an outpatient department on the first floor and a contagious disease hospital on the second.

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Northwestern University School of Medicine

The fourth annual Mayo Lecture in Surgery was delivered by Sir Harold Gillies, London, October 23. His subject was "The Development and Scope of Plastic Surgery."

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University of Toronto Faculty of Medicine

Registration of students in the Faculty of Medicine, session 1934-1935: First year, 140; second year, 169; third year, 144; fourth year, 127; fifth year, 131; sixth year, 112; diploma in public health, 12; bachelor of science (medicine), 4; diploma in radiology, 1; graduate students, 4; occasional students, 4. Total, 848.

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University of Virginia Department of Medicine

At the meeting of the University of Virginia Medical Society held October 8, Dr. Oscar Swineford read a paper on "Physical Allergy." Dr. Albert E. Casey spoke on "Experimental Alteration of Malignancy."

At the meeting of the society held October 22, the following program was given: Dr. Bruce Morton, "Two Cases of Parathyroidism—Results of operative removal of adenoma of the parathyroid gland with hypersecretion of parathormone;" Dr. James E. Kindred, "Reactions of blood cells of hemopoietic tissues to dyes."

On November 5, Dr. E. P. Lehman presented a paper on "Ureteroarachnoid Anastomosis" before the Society; Dr. C. C. Speidel showed motion pictures illustrating nerve injury and recovery in the frog tadpole.

Dr. Maximilian Ehrenstein, lecturer in pharmacological chemistry at the University of Berlin, has accepted a Fellowship in physiology at the University of Virginia for the current session. Dr. Ehrenstein will engage in investigations of the suprarenal gland.

The Gibbs Prize for 1934, of the value of $750, has been awarded to Dr. Alfred Chanutin, professor of biochemistry. This prize is limited to research on kidney disease and is awarded by a Board of Trustees of the New York Academy of Medicine.

Dr. Albert E. Casey, formerly an associate in the Department of Pathology at the Rockefeller Institute of Medical Research, has joined the staff of the Department of Pathology as associate professor.

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Temple University School of Medicine

The opening exercises were held Wednesday, September 26, 1934, Dean William N. Parkinson presenting the members of the teaching staff to the students in the first year class.

The enrollment for the session 1934-1935 is as follows: First year, 113; second year, 107; third year, 123; fourth year, 105.

The total of 448 includes 122 new students, 107 admitted to the first and 15 to the third year class. These students completed their premedical courses in fifty-three institutions and the following states are represented: California, Florida, Kentucky, North Carolina, New Jersey, New York, Pennsylvania, Virginia, West Virginia, Wisconsin and Puerto Rico. There are ninety-one Pennsylvanians and fourteen sons and daughters of physicians.

Medical College of Virginia

The ninety-seventh session opened September 11, 1934. The enrollment for the session is as follows: Medicine, 336; dentistry, 100; pharmacy, 71; nursing, 134.

The college is looking forward to the Centennial Celebration in the spring of 1938.

Dr. Anthony M. Ambrose of the Food Research Division of the United States Department of Agriculture is now working in the department of physiology and pharmacology doing research on the toxicity of insecticides.

The annual report of the outpatient department shows 65,154 patient visits for the session 1933-1934. Patient visits to the various clinics were: Surgery, 34,702; medicine, 24,541; obstetrical, 2,844; pediatrics, 3,062.

Dr. William R. Bond, professor of physiology, has been granted a leave of absence for the remainder of the academic year.

General News

Banting Research Foundation

The Banting Research Foundation was founded in commemoration of the discovery of insulin by Dr. F. G. Banting and Mr. C. H. Best. The income from the capital sum of approximately $700,000 is available to aid in the work of the Banting and Best Department of Medical Research and also to make grants in aid of the solution of such problems of medical research as the Trustees consider should be supported. The grants may take the form of living expenses or of monies for the purchase of animals, apparatus and other materials necessary for the solution of the research. The Trustees have adopted the principle of not making grants for research which is to be carried out elsewhere than in Canada. From $13,000 to $14,000 are distributed in this way per annum to various workers usually attached to university laboratories. The Executive Officers of the Foundation are: Chairman, Mr. C. S. Macdonald, president of the Confederation Life Association, Dr. V. E. Henderson and Dr. D. T. Fraser, joint Honorary Secretary-Treasurers.

Women in Medicine in Great Britain

The present position of women in medicine in Great Britain is shown in the educational number of the *British Medical Journal*. Coeducation is the general rule outside London, where the only schools open to women are the London School of Medicine for Women (which is confined to them) and, to a limited extent, University College Hospital and King's College Hospital. The total number of women medical and dental students in the medical schools of Great Britain in the session 1931-1932 was 1,272, while the corresponding number for males was 9,107. The London School of Medicine for Women (Royal Free Hospital) was established for the training of women in medicine in the days before there were any coeducational facilities for them, and it is still the principal school. Arrangements are made for the students of the school to obtain clinical instruction in special subjects at the National Hospital for Nervous Diseases, the Royal London Ophthalmic Hospital, the Great Ormond Street Hos-

pital for Children, the Elizabeth Garrett Anderson Hospital, the South London Hospital for Women, the Cancer Hospital and the Central London Ophthalmic Hospital. The London School of Medicine is of great importance to medical women. All its post-graduate appointments are open to women as well as to men. There is a gynecologic unit under a woman professor, entirely staffed by medical women. There are now more than 5,000 women in the Medical Register. There is an increasing demand for the services of women physicians, and the proportion of them who make good is as high as that of their male colleagues, if not somewhat higher. In the municipal hospitals a number of new resident appointments to be held by medical women have been created, for which the supply is not equal to the demand. The number of women doing specialist and consulting work is rapidly increasing. In the large cities there are hospitals staffed entirely by women doing excellent work. —*J. A. M. A.*, Oct. 13, 1934.

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Irradiated Evaporated Milk Institute

The Institute has made a grant of $4,200 to the Department of Home Economics of the University of Chicago for experimentation on evaporated milk. The The purpose of this study is to determine the effect of vitamin D evaporated milk (either the irradiated or the type with D concentrate added) on calcium utilization in adults as compared with that on untreated milk, both evaporated and liquid.

Abstracts of Current Literature

Rôle of Pharmacology in Medicine

Commercial manufacturing concerns are responsible for many important advances in the introduction of new drugs. However, because of industrial competition, exaggerated claims have often been made and important scientific information withheld. The support, by society, of pharmacology as a science is therefore necessary in order to assure critical study of drugs and thus prevent unfair exploitation of the sick. Commercial rivalry and interest in synthetic organic chemistry continually force the clinical use of new substances without reliable scientific background. These seriously compromise the growth of rational medical practice, and may induce another wave of "therapeutic nihilism."

The introduction of worth-while drugs requires the close cooperation of chemist, pharmacologist and clinician. No one is qualified to undertake the task singlehanded. Few institutions are properly prepared to do so. Cooperative research in university laboratories has resulted in the prompt evaluation, for clinical use, of such agents as carbarsone, dinitrophenol, ephedrine, ethylene, insulin, iodobismitol, liver extracts, the phthalein diagnostic dyes, sulpharsphenamine and tryparsamide. The promptness with which these materials have been introduced has been due, in a large part, to the comprehensive and highly critical pharmacological studies which were published before the agents were offered for medical trial, and which clearly defined their toxicity and mode of action.

Knowledge of the actions of chemicals on living things is part of the science of medicine. Application of this knowledge for the purpose of producing a desired

effect in a patient calls for discriminating judgment on the part of the physician. The use of drugs is therefore a part of the art of medicine, and its success depends largely upon the validity of judgment of the individual physician. If judgment is faulty, science should not be blamed. The wise physician will use only such drugs as are well known from the standpoint of their mechanism of action, toxicity and relative rates of absorption and excretion. He will try always to balance drug-hazard against disease-hazard so as never to endanger the welfare of his patient.—C. D. LEAKE, *Alumni Bull. Univ. of Calif. Med. School*, Sept. 1934.

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Organization of the Division of Medicine for Teaching

The plan of instruction in the Division of Medicine starts with the normal man and proceeds to the abnormal. In the general physical examination, emphasis is placed upon the use of the special senses, and students are taught the use of modern equipment for further exploration of the body. A course of study in the clinical laboratory carries the student temporarily away from the bedside, but the lessons learned from test-tube and microscope are kept in proper relation to the physical examination.

During the third year of medical school, students first share in the responsibilities for the care of the sick. This is the day for which they have waited five long years. Medicine now becomes intensely human. They are inclined to discard all previous instruction unless an effort is made to keep alive an interest in the fundamental sciences. A course in clinical physiology is therefore given to assist the student to interpret symptoms. Lectures and demonstrations in neurology, psychiatry and dermatology supplement the teaching in general medicine.

In the fourth, or senior year, groups of students are assigned to the medical division for approximately eleven weeks. During this period they serve as clinical clerks in the outpatient department, and in the medical wards of the hospital. Their day is divided in much the same manner as that of the physician in practice, with ward rounds early in the morning followed by office hours in the medical outpatient clinic until midafternoon when they return to the ward to complete the examination of patients.

Direct responsibility for the patient is assumed by the student upon the patient's entry into the clinic, and is continued on the ward. Thus the patient comes under the student's immediate supervision. The staff serve as consultants. The student is urged to go with his patient to instructors trained in special fields for personal consultation, if necessary. Such diagnostic procedures as are required, are done —avoiding the "routine studies" which are the curse of medical practice today. The social and economic phases of practice are kept before the student through visits to the homes of patients and by close personal contact. Thus the fourth year student knows the experience of being a doctor. It would be difficult to plan a course of instruction in the medical school which would prepare the student in a more practical way unless "field studies" could be included in the curriculum, which would permit the student to work side by side with a well-trained general practitioner.

Following the fifth, or intern year, those few who are qualified and elect to continue in general or internal medicine, are offered positions on the house-staff where they have two or three years in general medicine, including training in neuropsychiatry and dermatology. Most of them carry on research independently or with members of the staff.—WM. J. KERR, *Alumni Bull. Univ. of Calif. Med. School*, Sept., 1934.

Book News

The Autonomic Nervous System

By Albert Kuntz, Ph.D., M.D., Professor of Micro-anatomy in St. Louis University School of Medicine. 2d Ed. Lea & Febiger, Philadelphia. 1934. Price, $7.50.

The books affords a readable summary of our knowledge to date concerning the autonomic nervous system, including the innervation of all the systems of organs, an outline of the pathology, a consideration of visceral sensitivity and referred pain, and a detailed summary of the surgery of the system, as well as the procedures of periarterial sympathectomy and sympathetic ganglionectomy and ramisection, together with the indications for their use. An extensive bibliography is included. Many illustrations, with photographs of actual dissections, enhance the value of the book.

✦ ✦

A Text-book of Pathology; an Introduction to Medicine

By William Boyd, M.D., Professor of Pathology in the University of Manitoba. 2d Ed. Lea & Febiger, Philadelphia. 1934. Price, $10.

This book has been revised completely. The *extrinsic* causes of disease are considered and a chapter dealing with the part which heredity, the constitution of the patient, and sex play in determining the incidence and progress of pathological processes is included. A more logical sequence is introduced, disorders of growth are no longer divorced from tumors, the section on immunity and allergy has been entirely rewritten, and a new chapter dealing with a few of the principal diseases of the teeth has been introduced.

The new material includes new facts on trauma, von Gierke's glycogen storage disease, lead poisoning in children, the localization of infection, rhinosporidiosis, Oroya fever, the causation of anginal pain, tobacco hyper-sensitiveness in thrombo-angiitis obliterans, medionecrosis of the aorta, pneumonia in the new-born, duodenitis, stasis, gall-bladder, Oliver's work on renal architecture in chronic Bright's disease, renal infantilism, arrhenoblastoma of the ovary, sweat gland carcinoma of the breast, lateral aberrant thyroid tumors, Cushing's work on pituitary basophilic invasion in hypertension, monocytic leukemia, the St. Louis type of encephalitis, and Geschickter and Copeland's views on bone tumors.

✦ ✦

Essentials of Histology

By Sir E. Sharpey-Schafer, F.R.S., formerly Professor of Physiology in the University of Edinburgh. Edited by H. M. Carleton, M.A., B.Sc., D.Phil.; Lecturer on Histology in the University of Oxford, Research Fellow of New College, Oxford. 13th Ed. Lea & Febiger, Philadelphia. 1934. Price, $5.

The revision of the present edition has been painstaking and thorough. New sections on the development of the blood-corpuscles and on ossification have been included, together with a number of new illustrations, while a considerable portion of the older figures has been replaced by excellent photographs of microscopic preparations. The colored illustrations are numerous and of unusual excellence. The brief but well digested text enables the student to grasp the subject quickly and easily. The work is sufficiently elementary for beginners—especially for those studying histologic technique—but complete enough for the use of advanced students to whom it offers a key to the

interpretation of larger works. While the book includes a complete laboratory outline, it goes far beyond mere technique. It is a well-rounded course in its subject.

The work is conveniently arranged in fifty lessons, each of which may be supposed to occupy from one to three hours. The methods recommended are those which experience has proved dependable, but the directions given are, for the most part, easily capable of modification in accordance with the ideas or experience of the teacher. The appendix covering the details of histological methods is an invaluable aid to the histologist, technician and the student.

✦ ✦

Applied Anatomy. The Construction of the Human Body Considered in Relation to Its Functions, Diseases and Injuries.

By Gwilym G. Davis, M.D., Late Professor of Orthopedic Surgery and Associate Professor of Applied Anatomy in the University of Pennsylvania; revised by George P. Muller, M.D., Professor of Clinical Surgery in the Graduate School of Medicine of the University of Pennsylvania. 9th Ed. J. B. Lippincott Company, Philadelphia.

This work aims to teach surgical principles through the medium of anatomical relations. The present edition has been entirely rewritten and many new illustrations have been added. It should have high value as a teaching asset. The mechanical work is excellent. Printed in large type on a heavy dull finish paper, readability is excellent. The large number of well made illustrations add much to the value of the book for the student.

✦ ✦

Physical Diagnosis

By Richard C. Cabot, M.D., Emeritus Professor of Clinical Medicine in Harvard University. 11th Ed. William Wood & Company, Baltimore. 1934. Price, $5.

The work has been thoroughly revised and completely reset in new type. By omitting the chapter on the blood, and laboratory data which are no longer taught as part of physical diagnosis, space has been found for much valuable new material, greatly improving the book. This includes a new profusely illustrated chapter on the electrocardiogram, also new or enlarged sections on subacute infectious endocarditis, coronary heart disease, the measurement of cardiac reserve, pulmonary heart disease, the heart in myxoedema, x-ray examination in tuberculosis, latent tuberculosis, recovery from tuberculosis, tuberculosis in children, cancer of the bronchi and lung, the diagnosis of pulmonary emphysema, pneumoconiosis, pulmonary embolism, and amebic dysentery. Many new illustrations have been added.

✦ ✦

A Textbook of Histology: The Functional Significance of Cells and Intercellular Substances

By E. V. Cowdry, M.D., Professor of Cytology in the School of Medicine, Washington University. Lea & Febiger, Philadelphia. 1934. Price, $5.50.

The subject is presented in a manner which differs markedly from the one employed by textbooks on histology. The central theme is the blood vascular system. Wherever possible, organs in different stages of functional activity are compared so that a dynamic conception of the body will be given. Structure is interpreted in terms of function. Structural modifications in pathologic states are discussed. The goal in view is that the students shall gradually visualize more and more accurately the wonderful reactivity of the minute structures of the human body in terms of biochemistry, physiology and pathology, and, finally, in practice shall institute measures of assistance with due caution. References to the literature will prove most helpful to the student.

Anatomy of Surgical Approaches

By Llewellyn C. Kellogg, M.D., Professor of Anatomy in the College of Medical Evangelists. William Wood & Company, Baltimore. 1934. Price, $1.50.

An entirely new brief manual of applied surgical anatomy which well serves the double purpose of a guide to the surgeon in carrying out surgical procedures not frequently performed, and also as a laboratory guide for students. Many of the procedures are more or less generally known to the medical profession but some of them are original and not described elsewhere. The directions are strikingly simple and concise but explicit and easy to follow. The author demonstrates how vessels, nerves, and bones can be reached for treatment with the least possible damage to overlying structures, and how pus pockets, especially those of the hand, may be drained with ease and without leaving troublesome scars.

◆ ◆

Internal Medicine: Its Theory and Practice. In Contributions by American Authors

Edited by John H. Musser, B.S., M.D., Professor of Medicine in The Tulane University of Louisiana School of Medicine. 2d Ed. Lea & Febiger, Philadelphia. 1934. Price, $10.

The extensive revisions and additions cover the developments of the last two years that are recognized as well established, emphasizing etiology and treatment, including diseases of the lymphatic vessels, material on tuberculosis of the kidneys and urinary tract, and bacillary dysentery. Certain chapters have been combined and the enlargement of the type page has made it possible to add over seventy-five pages of new material without increasing the number of pages.

The work offers modern experimental and clinical observations concisely presented by authorities preëminent in their fields, each of whom writes from the viewpoint of his experience as a teacher, presenting his specialized knowledge in such a way as to make the work an authoritative source of information for both the student and practitioner.

The subject matter has been restricted to the practical, the material is well organized and the information covers the latest and most important knowledge in this field.

◆ ◆

Practical Obstetrics for Students and Practitioners

By P. Brooke Bland, M.D.; Professor of Obstetrics in Jefferson Medical College; and Thaddeus L. Montgomery, M.D., Associate in Obstetrics in Jefferson Medical College. 2d Ed. F. A. Davis Company, Philadelphia. 1934. Price, $8.

This work embodies the obstetric practice and methods taught and practiced in the department of obstetrics in the Jefferson Medical College. Despite the many changes made in the text in this edition, the book still provides a work of moderate size occupying a place between the large textbook and the small manual. The text is in keeping with modern practice. The obstetric literature of the world has been drawn on freely in making the revision, as is shown by the long list of references tabulated in a chapter of "Referred Reading."

◆ ◆

Text-book of Histology

By Harvey Ernest Jordan, A.M., Ph.D., Professor of Histology and Embryology in the University of Virginia. 2d Ed. D. Appleton-Century Company, New York. 1934.

The text has been thoroughly revised; certain portions have been rewritten; much new material has been added. The most extensive revisions and additions are in the sections dealing with the blood, the reticulo-endothelial system, the endocrine tissues, striped muscle, neuroglia, nervous tissue, the reproductive systems and the lymphoid organs.

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FOREWORD

The following compilation of financial assistance that is available in the United States and Canada to the graduate medical student has been brought up to date as far as possible by being referred to the institutions concerned or by the use of the latest available printed sources. However, figures of this kind, even in late catalogues and reports, are so often reprinted from older sources that it is impossible to be absolutely sure about the exactness at the date of publication of such items as "present amount," or reported annual income. But it is hoped that the information in each case is sufficient to indicate to a prospective applicant whether the Fellowship or fund in question will be of use to him, and whether it is worth while for him to make further inquiries about it at the source.

The items are listed alphabetically according to the institution, organization, or designation of fund allocating fund. A subject index gives references as to stated fields in which funds are specifically allocated, as anatomy, cancer, diabetes, general, pathology, surgery, etc., thus enabling interested persons to inform themselves of available opportunities. In the first edition, the arrangement was by subjects, but frequent users of the pamphlet assert that it was not satisfactory and requested the present arrangement.

Three indices have been made. One lists the institutions and organizations offering research and other opportunities for graduates in medicine; the second lists the funds, scholarships and fellowships; the third is a list of subjects and fields in which opportunities are offered.

Fellowships, Funds and Prizes Available for Graduate Medical Work in the United States and Canada

UNIVERSITY OF ALBERTA, FACULTY OF MEDICINE

Edmonton, Canada

Rhodes Scholarship £450

This scholarship, of the value of £450 a year for three years, is subject to the continued approval of the College at Oxford of which the scholar is a member. Research fund in the Department of **Biochemistry.**

AMERICAN ACADEMY OF ARTS AND SCIENCES

28 Newbury St., Boston, Mass.

Rumford Fund ..... total of $3,230

To award premiums to investigators for discoveries in **heat or light** tending most to promote the good of mankind, and for grants toward researches in light or heat. Roentgen-ray research has been considered as coming within the scope of the fund. The grants are assignable to any duly qualified resident of North America; they vary from $100 to $500. Original amount, $5,000; present amount, $82,748.

AMERICAN ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

1500 Medical Arts Building, Omaha, Neb.
W. P. Wherry, Executive Secretary

Research Fund $3,000

Established 1915, for **eye, ear, nose, and throat** research. Awarded by the council annually.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

Smithsonian Institution Building, Washington, D. C.

General Endowment Fund ..... about $500

The Association, founded in 1848, is made up of fifteen sections representing different branches of **science, including medicine.** The General Endowment Fund had a capital in 1933 of $156,424.83, with an average income of about 4 per cent. Appropriations are made from this fund to aid scientific research, especially by grants allotted by the Committee on Grants for Research, and usually amount to less than $500 each.

Association Prize **$1,000**
The prize is awarded at the annual meeting of the Association to a person presenting a noteworthy contribution to science.

AMERICAN ASSOCIATION FOR THE STUDY OF GOITER

Dr. Julius R. Yung, Secretary
Rose Dispensary Building, Terre Haute, Indiana

Research on Goiter **$300**
Awarded annually for the best essay based on original research on goiter. Must be submitted to the secretary before March 15 of any year.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

1634 Eye Street, N. W., Washington, D. C.

Sarah Berliner Research and Lecture Fellowship.
Available for research in physics, chemistry or biology. This fellowship is open to American women holding the degree of Doctor of Philosophy or Doctor of Science or having an equivalent preparation, who give promise of distinction in the subject to which they are devoting themselves.
This fellowship is in effect two fellowships of which one or the other (but not both) will be awarded each year:
1. A fellowship of $1,200 for research only.
2. A docentship of $1,500, the holder of which shall have arranged to continue research with the giving of one or more courses of lectures in the university at which she proposes to reside.

Margaret E. Maltby Fellowship **$1,500**
This fellowship is open to women having a degree in Arts, Science or Literature.

A. A. U. W. International Fellowship **$1,500**
The fellowship is open to all members of Associations or Federations of University Women forming branches of the International Federation. It will be tenable at any approved university or institution in a country other than that in which the Fellow has received her previous education or habitually resides. The tenure of the fellowship shall be from July 1, 1934, and the stipend shall be paid half-yearly in advance, provided that the Fellow has forwarded a statement before the second instalment is paid, satisfying the committee that she is pursuing the research indicated in her application.

Dorothy Bridgman Atkinson Fellowship **$1,500**
The fellowship is open to women who, in addition to a bachelor's degree, have completed at least one year of graduate study and give promise of distinction.

Fellowship Crusade National Fellowship **$1,500**
This fellowship is open to American women for graduate study or research.

A. A. U. W. Fellowship Crusade International Fellowship.....**$1,500**
An international fellowship to enable the holder to carry on a year's research work in science in some country other than her own. The fellowship will be available for work in **mathematics, physics, chemistry, geology, experimental psychology and biological sciences** (including **physiology and pathology**. It is open to members of Associations or Federations forming branches of the International Federation of University Women.

Alice Freeman Palmer Memorial Fellowship.....**$1,500**
Candidates for this research fellowship must not only have the degree of Doctor of Philosophy or Doctor of Science, but must also present evidence of distinctive subsequent accomplishment in research.

Mary Pemberton Nourse Memorial Fellowship.....**biennially $2,000**
The candidate must possess a bachelor's degree or its equivalent. She must also have completed a minimum of either two years of graduate study tending toward **public health** work (for instance in such subjects as **biology, chemistry, the medical sciences, economics, sociology**), or two years of practical work in the field of public health.
The fellowship may be used for any work along the lines of public health work which shall be approved by the committee. The following three types of work indicate the directions in which it may be used:
1. Extensive study of public health problems and practice abroad or in the United States.
2. Intensive study of special problems of public health.
3. Study of the science of public health in some approved institution.

Alpha Omicron Pi Fellowship.....**$1,000**
This fellowship is open to women having a degree in Arts, Science or Literature.

AMERICAN CHILD HEALTH ASSOCIATION
450 Seventh Avenue, New York, N. Y.

Maternal Welfare Project.
Begun in 1924 for the betterment of **obstetric practice.** Original amount, $100; 2nd, $500, now discontinued. Administered by the Maternal Welfare Joint Committee.

AMERICAN COLLEGE OF PHYSICIANS
133-135 S. Thirty-sixth Street, Philadelphia, Pa.

John Phillips Memorial Prize.....**variable, $1,000—$1,500**
Established in 1930 by the Board of Regents of the American College of Physicians in memory of the late Dr. John Phillips, who had been a member of said Board, and who lost his life in the Cleveland Clinic Disaster of 1929. The prize is given in recognition of the

most meritorious contribution to internal medicine and sciences contributing thereto. The work on which this is based must be done, in whole or in part, in the United States and Canada. The recipient is selected by a Special Committee of the American College of Physicians, and the results of his work shall be presented before the Annual Meeting of the College, after which the prize is officially awarded. While the award is intended to be given annually, the College reserves the right to make no award of the prize, if a sufficiently meritorious piece of work has not been recommended.

AMERICAN HEALTH ASSOCIATION

170 Seventh Avenue, New York, N. Y.

Sedgwick Memorial Medal Fund.

Established 1926, by donors, most of whom were former students of Professor William T. Sedgwick at Massachusetts Institute of Technology, for the purpose of awarding a medal for distinguished service in public health, not oftener than once a year.

AMERICAN LARYNGOLOGICAL ASSOCIATION

1721 Pine Street, Philadelphia, Pa.

Casselberry Prize Fund **$500**

For encouraging advancement in the art and science of laryngology and rhinology, to be awarded in part or as a whole, for a prize award, decoration or the expense for original investigation and research in the domains mentioned above. Particulars from Dr. Wm. V. Mullin, 2020 East 93rd St., Cleveland, Ohio.

De Roaldes Prize (gold medal).

Established 1908, to advance the science of laryngology and rhinology in the United States and Canada. Presented triennially to the writer of an original thesis. Original fund, $500. Present fund, $700.

AMERICAN MEDICAL ASSOCIATION

535 N. Dearborn St., Chicago, Ill.
Olin West, Secretary

Appropriation for Grants ..... **each $100-$400**

Established 1920, to further meritorious research in subjects relating to scientific medicine and of practical interest to the medical profession which otherwise could not be carried on to completion. Annually available, $8,000 to $10,000.

Fund of Council on Physical Therapy **$2,000**

To be used in connection with investigations, conducted by accredited research workers, in the field of physical therapy.

Fund of Committee on Therapeutic Research **$2,000**

To be used in connection with chemical investigations conducted by accredited research workers.

AMERICAN OPHTHALMOLOGICAL SOCIETY

2213 Walnut Street, Philadelphia, Pa.

Medal for Research.

Established 1919, for research in **ophthalmology.** Original fund, $1,500. Present fund, $1,500. Awarded by a committee of the Society. Not confined to members.

AMERICAN OTOLOGICAL SOCIETY

(Incorporated)

5th Avenue and 103rd Street, New York, N. Y.

Research Fund.

Established 1925, with a donation by the Carnegie Corporation of $90,000 to be distributed over five years for research work on **otosclerosis.** Further gifts have raised fund to $500,000. This sum is invested and the interest is used to support **otological research.** Grants are made by a Board of Trustees, consisting of eight otologists who are members of the American Otological Society, three consultants, and three lay advisers.

AMERICAN PHARMACEUTICAL ASSOCIATION

2215 Constitution Avenue N. W., Washington, D. C.

Centennial Fund.

Established 1877 by the local Philadelphia Committee for meeting of 1877 and members, to aid in the prosecution of original **research.** Original amount, $1,107. Present amount, $5,740.94. Grants are made by the Council of the Association.

Research Fund.

Established 1916 from the profits from the sale of the National Formulary, to encourage investigation and research upon any subject relating to **pharmacy or the collateral sciences.** Original amount, $7,043. Present amount, $64,486.44. Annually available, 50 per cent of the income until the fund amounts to $100,000, and then the entire income. Grants are made by the Council of the Association, on recommendation of the Committee on Pharmaceutical Research.

Ebert Prize.

A medal is awarded annually to the person who submits the best essay or written contribution containing an original investigation of a **medicinal substance,** determining new properties, or containing other meritorious contributions to knowledge, or for improved methods of determining merit, or for the preparation of chemical or pharmaceutical products. Capital, $1,044.90.

Joseph P. Remington Honor Medal Fund.

A trust from the New York Branch, from the proceeds of which a gold medal is awarded annually to the man or woman who has done most for American pharmacy during the preceding year, or whose efforts during a number of years have culminated at a point during the preceding year where the result of these efforts would be considered as being most important and advantageous for American pharmacy. Capital, $1,303.59.

AMERICAN PHYSIOLOGICAL SOCIETY

Dr. F. C. Mann, Secretary, Rochester, Minn.

Porter Fellowships for Physiologic Research....Stipend not less than $500

Candidate must have demonstrated ability to do research in physiology. Work may be done anywhere at approved choice of candidate. Bequest of Dr. Wm. T. Porter.

ASSOCIATION OF AMERICAN PHYSICIANS

195 Church Street, New Haven, Conn.
Dr. George Blumer, Treasurer

Kober Medal.

Established by Dr. George M. Kober, to be awarded annually to a member who has contributed to the progress and achievement of the medical sciences or preventive medicine, on the recommendation of the Council. Original amount, $1,000.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES

Washington, D. C.

Henry S. Wellcome Medal and Prize.....$500

Established 1916, by Henry S. Wellcome of London, to encourage the study and research of problems connected with the health of armies and the efficiency of the medical services. Annually available, a gold medal and $500. Competition is open to all medical officers, former medical officers, acting assistant and contract surgeons of the Army, Navy, Public Health Service, National Guard, U. S. Volunteers, and of the Reserves of the United States, commissioned medical officers of foreign military services and all members of the Association.

BARNARD FREE SKIN AND CANCER HOSPITAL

3427 Washington Avenue, St. Louis, Mo.

General Endowment Fund.....$20,801

Established by various donors for the purpose of affording medical and surgical aid and nursing to persons suffering from skin diseases or cancer and diseases thereto allied, also research study of the diseases and the dissemination of knowledge in regard to them, and their treatment. Capital, $543,546.12.

BOSTON SURGICAL SOCIETY

Dr. Thomas H. Lanman, Secretary
264 Beacon Street, Boston, Mass.

Bigelow Medal Fund.....**flexible**

Established 1915, by Dr. William Sturgis Bigelow, to award a medal for contributions to the advancement of surgery. Original amount, $5,000. Present amount, $6,734. Income available at whatever time and in whatever amount the Society may elect.

ROBERT B. BRIGHAM HOSPITAL

Boston, Mass.

Joel and Ellen Goldthwait Research Fund.....**$4,400**

Established 1915, by the wills of Joel and Ellen Goldthwait, for research in connection with the treatment of chronic disease. Original amount, $60,000. Present amount, slightly in excess of $80,000.

BROOKLYN GYNECOLOGICAL SOCIETY

1313 Bedford Avenue, Brooklyn, N. Y.

Brooklyn Gynecological Society Memorial Fund.

To commemorate the names of members who have attained more than local fame, to provide for literature and assist in research in gynecology and obstetrics.

UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL

San Francisco, Calif.

Wiel Fund.

Established by the Wiel family for the purchase of equipment to be used in the study of diseases of the heart and blood vessels. Present amount, $2,000.

J. J. and Nettie Mack Memorial Foundation.

Established by Mr. and Mrs. George H. Roos in memory of Mrs. Roos' parents, J. J. and Nettie Mack, to be used for the study of cancer and surgical diseases of the lungs. Amount, $100,000. Only the interest is used for research.

Medical Research Fund: Cancer.

Established by a friend of the University for the establishment of a fund to support research work on cancer or on other medical subjects of great importance, more or less closely allied to cancer. Amount, $100,000.

Christine Breon Fund for Medical Research.

Given by the late Mrs. Christine Breon for the purpose of establishing a fund for medical research. Annual income, approximately, $25,000.

Pauline Fore Moffitt Memorial Fund.

$10,000 given to the University by Regent James K. Moffitt, this sum to be held as a foundation of a memorial to Pauline Fore Moffitt, the income from the foundation to be devoted to **research** in the Medical School on such subjects as the President of the University and the Dean of the Medical School may deem wise and proper.

J. H. MacKenzie Endowment Fund.

$10,000, given by the late Mr. J. H. MacKenzie to the Medical School for the investigation and treatment of **diseases of the nervous system**, with particular reference to Parkinson's disease, under the direction of Dr. H. C. Naffziger, Professor of Surgery.

Lillie B. Matson Fund.

$2,000 given by Lillie B. Matson for the purpose of **cancer research.**

Herzstein Fund for Physiological Research.

Established by the late Dr. Morris Herzstein, for research in **physiology.** Present amount, $3,775.76.

James Moffitt Memorial Fund.

$20,000 for research in **clinical medicine** in the Medical School.

Purington Research Fund.

$5,000, income of which is to be applied to **pharmacological research** in the Medical School on subjects allied to **homeopathy.**

Mathilda Herman Jackson Memorial Fund.

Established for research on **diseases of the throat and lungs** and catarrh. Annual income, approximately, $300.

Fellowships.

A fellowship is provided by the J. J. and Nettie Mack Memorial Foundation which combines clinical and research opportunities in **thoracic surgery** and correlated research problems. It is open to graduates in an advanced stage of training.

A research fellowship in surgical research related to the problems of the **central nervous system,** is offered yearly to a graduate student under the Dudley Cates Fund.

Applications for the Mack or Cates fellowships should be submitted to Dr. H. C. Naffziger, Professor of Surgery.

Hooper Foundation.

The George Williams Hooper Endowment Fund was established in 1913, by Mrs. George W. Hooper, for **medical research.** Present income, $21,000. Coleman Fund income, $4,950. Donations, $19,250. General University funds, $24,050.

Edith Claypole Memorial Research Fellowship.

Awarded to a woman graduate student for research in **pathology and bacteriology,** particularly in regard to infectious diseases in man. The award is made by the Regents of the University on the recommendation of the President and of the Professor of Bacteriology. The stipend will eventually be the entire income of $20,000.

John C. and Edward Coleman Memorial Fund.

Established 1921, by heirs of John C. Coleman, for medical research relating to **deafness.** Present amount, about $100,000. Annual income, about $4,950.

CANADIAN TUBERCULOSIS ASSOCIATION

Dr. G. J. Wherrett, Secretary
304 Plaza Building, Ottawa, Canada

Two prizes of $250 each awarded annually for (a) **clinical research,** (b) **laboratory research.** Open to medical staffs of sanatoria, junior to medical director, and of less than five years' experience.

CARNEGIE INSTITUTION OF WASHINGTON

Washington, D. C.

Founded in 1902 by Andrew Carnegie. Appropriations are made annually for support of organized research activities of the Institution itself, primarily within the **physical and biological sciences.** Activities undertaking research which might be related to medicine are Nutrition Laboratory (Boston, Mass.), Department of Embryology (Baltimore, Md.), and Department of Genetics (Cold Spring Harbor, Long Island, N. Y.)

HERBERT L. CELLER FOUNDATION FUND

Dr. Benjamin Eliasoph, 1050 Park Avenue, New York, N. Y.

Annual Fellowship, of about $1,000, depending on the income for the year, which is given usually to a graduate in medicine who is in need of financial aid in order to continue his studies or to do **research.** The grant is usually made in November and applications are called for two months before.

CENTRAL NEUROPSYCHIATRIC ASSOCIATION

Dr. Henry W. Woltman, Secretary, Rochester, Minn.

A fund has been accumulating since 1921, the use of which has not yet been determined. Present amount, about $1,000.

UNIVERSITY OF CHICAGO

Chicago, Ill.

Louis B. and Emma Kuppenheimer Foundation.....Annual income, $6,900

Established in 1927 for the study of the structure, functions, and diseases of the **eye** and to support the clinical, research, and teaching activities pertaining thereto. Present amount of endowment, $250,000.

Albert B. Kuppenheimer Foundation.....**Annual income, $15,776**
Established in 1932 for study of and research work in **venereal diseases**, under the direction of the Department of Medicine. Present amount of endowment, $704,629.50.

Watson Keep Blair Fund.....**Annual income, $2,350**
Established in 1931 by bequest of $50,000 for **research** work in medical school.

A. D. Thomson Medical Fund.....**Annual income, $1,912**
Established in 1925, income to be expended under direction of Dr. Wilbur E. Post and Dr. Herman L. Kretschmer for **genito-urinary surgery.**

Biological grant of $50,000 for 1934-35 from the Rockefeller Foundation for research work in the **biological sciences.**

Luckhardt Fellowship.....**Available for 1934-35, $1,500**
Created for fellowship in the **medical sciences**, to be awarded by the Department of Physiology.

Edith Barnard Memorial Fellowship in Chemistry.....**$105**

Dane Billings Memorial Fellowship.....**$500**
For research in medicine.

Daniel R. Brower Fellowship.....**$250**

Seymour Coman Fellowship.....**$1,582**
For scientific research with special reference to **preventive medicine** and the cause, prevention, and cure of diseases. The candidate must have the qualifications of the M.D. or Ph.D. degree and must devote his entire time to research.

Stanton Abeles Friedberg Fellowships in Laryngology and Otology....**$460**

Francis A. Hardy Fellowship in Surgery and Assistant House Surgeonship in the Presbyterian Hospital.....**$600**

Hyde Memorial Fellowship.....**$1,324**
Research in skin diseases and cancer.

E. Fletcher Ingals, Jr., Fellowship in Laryngology and Otology.....**$600**
Awarded to a physician who is seeking to qualify himself for the practice of laryngology and otology. Opportunity is afforded for advanced work and clinical training.

Mr. and Mrs. Frank G. Logan Fellowships.....**$2,675**
For research in medicine, surgery, hygiene and bacteriology, and pathology.

Fellowships in Pathology.....**$600**

Anna Louise Raymond Fellowship in Medicine.....**$1,800**
Awarded biennially in support of work directed by Dr. Wilber E. Post.

Nicholas Senn Fellowship in Surgery.....$666
Awarded to a graduate in medicine.

Douglas Smith Foundation.....Capital Fund, $32,977
Provides funds to support various research projects in medicine. The number of fellowships awarded and the amount of each fellowship varies according to the problems under investigation and the qualifications of the holders of the fellowships.

Gustavus F. Swift Fellowship in Chemistry.....$606

Talcott Fellowships.....$403
Reserved for students studying for higher degrees, preferably for graduates of Rockford College.

A. D. Thomson-Bevan Fellowship in Surgery and House Surgeonship in the Presbyterian Hospital.....$500
Awarded on recommendation of the Chairman of the Department of Surgery of Rush Medical College to a graduate in medicine.

Helen Kimmins Van Liere Research Fellowships in Physiology.....$101

William H. Wilder, Jr., Fellowship in Neurology.....$476

Louise B. and Emma M. Kuppenheimer Foundation.
Established for the study of structure, functions, and diseases of the eye. The annual income is available.

Lasker Foundation.
For research in causes, nature, prevention, and cure of degenerative diseases. The annual income is available.

Gerard Van Schaick Fund.
For investigation of the pathology of the eye. The annual income is available.

Joseph A. Capps Prize.....$500
For the most meritorious investigation in medicine or in the fundamental sciences, provided the work has a definite bearing on some medical problem.

THE CHILDREN'S HOSPITAL RESEARCH FOUNDATION

Dr. A. Graeme Mitchell, Director
Cincinnati, Ohio

Children's Hospital Fellowship.....$300
For an assistant resident in pediatrics who is also a candidate for the degree of Master of Science, for work in pediatrics in the Graduate School of Arts and Sciences of the University of Cincinnati.

Children's Hospital Research Foundation.
Established in 1930 by Mr. William Cooper Procter, and having a

$3,000,000 endowment. Provides for Fellowships and Scholarships in pediatric research at the Children's Hospital of Cincinnati.

Neave Fellowship in Pediatrics **$300**
Established for graduate work in pediatrics in connection with the Cincinnati Orphan Asylum, an institution affiliated with the Department of Pediatrics of the College of Medicine, University of Cincinnati.

UNIVERSITY OF CINCINNATI GRADUATE SCHOOL
Cincinnati, Ohio

Baldwin Fellowships* ..... **$500-$750**
According to qualifications and training of the applicants. Preference given to those intending to become candidates for the degree of Doctor of Philosophy.

Taft Fellowships* (6) ..... **$500-$750**
According to qualifications and training of the applicants. Preference given to those intending to become candidates for the degree of Doctor of Philosophy.

David M. Hyman Fellowship in Research Medicine **$250**
For graduate students engaged in investigative work in internal medicine.

Herman M. Moos Fellowship in Internal Medicine **$1,300**
For a graduate student in internal medicine.

Neave Fellowship in Pediatrics **$300**
For graduate work in pediatrics in connection with the Cincinnati Orphan Asylum, an institution affiliated with the Department of Pediatrics of the College of Medicine.

William Cooper Procter Research Fund.
Funds are provided for research fellowships in pediatrics at the Children's Hospital of Cincinnati.

Merrell Fellowship **$500**
A fellowship in biochemistry for the investigation of the natural cure of disease.

Christ Hospital Fellowships (2) **$750**
For graduate students in biochemistry.

Charles Arnold Iglauer Fellowship in Biochemistry ..... **Income of $2,000**
For graduate students in biochemistry.

Andrew Juergens Fellowship in Biochemistry **$1,500**
For investigative work on the properties and functions of the skin.

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* These fellowships have been withdrawn temporarily, but it is anticipated that they will be re-established when finances have improved

University Fellowship in Surgery.....$1,000
Awarded by the Department of Surgery to the resident surgeon in the Cincinnati General Hospital.

Ransohoff Fellowship in Surgery.....$1,000
For the promotion of the study of surgery and surgical anatomy.

Graduate Assistantships in Surgery (8).....$350
For research in surgery.

L. A. Ault Fund in Surgery.....$600
For research in surgery.

UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE
Cincinnati, Ohio

Seeley Teaching Fellowship in Internal Medicine.....$850
For advanced work in medicine.

David Teaching Fellowship in Preventive Medicine.....$600
For research in bacteriology and preventive medicine.

James Gilmore Hyndman Fellowship in Preventive Medicine.....$1,000
For research in preventive medicine.

Mendenhall Scholarship in Obstetrics.....$500
Awarded to resident in obstetrics in the Cincinnati General Hospital.

Wyler Scholarship in Ophthalmology.....$250
Awarded to resident in ophthalmology in the Cincinnati General Hospital.

Holmes Senior Scholarship in Oto-Laryngology.....$350
Awarded to senior resident in oto-laryngology in the Cincinnati General Hospital.

Holmes Junior Scholarship in Oto-Laryngology.....$250
Awarded to junior resident in oto-laryngology in the Cincinnati General Hospital.

CLEVELAND CLINIC FOUNDATION
Cleveland, Ohio

Promotion of researches in biophysics, biochemistry, endocrinology, urology and problems pertaining to surgery and to internal medicine. For work in any of these, Fellows may be appointed as need arises. There are two established Fellowships:

George W. Belcher Fellowship in Urological Research

Sarah Tod McBride Fellowship in Biophysics

Available funds vary according to requirements of work done.

CHRIST HOSPITAL INSTITUTE OF MEDICAL RESEARCH

Carroll H. Lewis, Executive Director
Cincinnati, Ohio

Fund for Medical and Scientific Research.
Established 1927, by James N. Gamble. The amount of the gift is not made public.

COLLEGE OF PHYSICIANS OF PHILADELPHIA

19 S. 22nd Street, Philadelphia, Pa.

Alvarenga Prize **$300**
Established 1888, by Pedro Francisco da Costa Alvarenga of Lisbon, Portugal. Original amount, $4,140. Present amount, about $6,000. Essays may be on any subject in medicine, must not have been previously published, and must be in English.

COLORADO FOUNDATION FOR RESEARCH IN TUBERCULOSIS

Colorado Springs, Colo.

Research Fund.
Organized 1924, to add to the sum of knowledge of tuberculosis and contribute to its prevention and cure. Present fund, $150,000 as of May 1st, 1928.

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE

Denver, Colo.

Graduate Fellowships **$400**
Eight of $400 each, available for students doing graduate work in any department of the University, including the School of Medicine.

Commonwealth Fellowships in Psychiatry **$2,000**
The Commonwealth Fund has provided Fellowships available for a two-year period; granted only to candidates having the M.D. degree and one year of general internship.

Chester H. Elliott Memorial Prize **$50**
In pathology.

COLUMBIA UNIVERSITY, COLLEGE OF PHYSICIANS AND SURGEONS

New York, N. Y.

William Bayard Cutting Traveling Fellowships **$1,000**
These Fellowships, of which there are an indeterminate number, at a minimum of $1,000 a year, are given for advanced study and travel in medicine, science, or other subjects, and may be used in the United States or in a foreign country.

George Blumenthal Fellowship.....$1,000
For advanced study and research in **medicine and surgery.** Not to be awarded for a second year.

Edward S. Harkness Fund.
Income to be used for **medical education and research.** Present amount, $1,127,159.50.

Mrs. Stephen V. Harkness Fund.
Income to be used for **medical education and research.** Present amount, $1,426,939.91.

Dr. Walter B. James Fund.
Income to be used for the benefit of the College of Physicians and Surgeons. Present amount, $50,000.

Maria McLean Proudfit Fellowship.....**quadrennially $1,500**
For research in **internal medicine.** The appointment is made every four years, but is for two years only, or for the sum of $3,000 in all, as the appointment is allowed to remain vacant during the two intervening years in order to accumulate interest. The Fellowship is not necessarily for full-time research. The holder must be a son of native-born American parents, a graduate in medicine, who shall pursue advanced studies in internal medicine under the direction of the Medical Faculty of the University, at Columbia University or elsewhere, and shall remain unmarried during the term of his appointment. The next appointment will be in 1936-7.

Dr. Abram Dubois Fellowship.....$900
Diseases of the **eye, or surgical pathology.** Fellowship awarded to a graduate of the College of Physicians and Surgeons for one year, but may be renewed at the discretion of the Committee. The holder shall devote his time to clinical or laboratory study at home or abroad.

Koplik Children's Scholarship.
To be awarded every second year to a graduate physician for having shown special aptitude for original work in the investigation of the **diseases of children.** Present amount, $15,000.

L. Emmett Holt Fellowship in Diseases of Children.
Awarded annually for study in this country or abroad. Present amount, $24,500.

Wanger Melanin Fund.
A gift, added to from time to time, from Mr. and Mrs. Walter F. Wanger for the study of the **pharmacology of Melanin.**

Pyridine Fund.
$1,500 given by the Ciba Company for **pharmacological study** of their product, Coramine.

Lee Fund.
Income is to be used to meet the cost of equipment and research in the department of **physiology.** Present amount, $30,000.

William T. Bull Memorial Fund.

Income is to be applied to meet the cost of conducting original research in surgery. Present amount, $32,250.

Emil C. Bondy Fund.

The income is to be applied, first, toward investigation into the cause, prevention, and cure of cancer, and second, toward general research in medicine and surgery and their allied subjects. Present amount, $100,000.

George Crocker Special Research Fund.

The income is to be used in cancer research. Present amount, $1,415,000.

Rosenthal Fund for Medical Research.

$2,948 for cancer research.

Adrian Lambert Fund

To be used for the study of suppurative diseases of the lungs and thorax. Gift added to from time to time.

Stevens Prize Fund.

Income is to be awarded every three years for the best medical essay covering original research as determined by the committee in charge of the prize. Present amount, $1,900.

L. A. Van Praag Fund.

To be used for research into the causes and cure of cancer. Present amount, $8,000.

THE COMMONWEALTH FUND

41 East 57th Street, New York, N. Y.

British Fellowships.....**about $3,000**

The Commonwealth Fund, a philanthropic foundation existing since 1918 and supported by gifts from the late Mrs. Stephen V. Harkness, has established for British graduate students a number of Fellowships tenable at American Universities. Fellowships are tenable for two years, but a very few may at the discretion of the Directors be extended for a third year.

Candidates must be of British descent and be domiciled in England, Scotland, Wales or Ireland, or be from the British Dominions. The former must be graduates of recognized universities in the British Isles, and the latter must have studied in such universities, but need not necessarily have graduated at them. Another group of candidates includes persons of British descent who hold an appointment under the British Government, or the Government of India, or the Government of a British Dominion, Colony, Protectorate or Mandated Territory. A separate memorandum may be obtained from the Secretary as to the conditions of tenure and emoluments of Fellows of this category, who are called Service Fellows.

The Committee of Award is prepared to consider applications from two classes of candidates; first, those who have engaged in higher

study or research subsequent to graduation, and are in a position to submit evidence that they are fitted to pursue higher study or to conduct original work in some branch of learning in an American University, and second, candidates who have distinguished themselves during their undergraduate career and desire to extend their studies in an American University. The Committee will consider only those candidates who are prepared to give a promise that on the expiration of their Fellowships they will return to Great Britain or some other part of the British Empire.

There is no fixed stipend, but it is estimated that the cost to the Commonwealth Fund of each Fellowship is about three thousand dollars a year. This includes an equipment allowance, travel allowance from the Fellow's home to his American University and return, tuition and laboratory fees, travel during the Christmas and Easter recesses, three months' travel at the end of the first academic year, and $150 a month for living expenses for 24 months from the date of sailing from home. Fellowships are vacated by marriage, except in the case of Service Fellows.

The Commonwealth Fund Fellowships are not tenable with a Fellowship from any other Foundation established for a similar purpose in the United States. Speaking generally, no limitation is imposed on the subject of study to be undertaken by the Fellow during the tenure of Fellowship. In the particular case of candidates in **medicine**, however, while research in the scientific aspects of medicine is within the scheme, **purely clinical studies are excluded.** Candidates are selected by a British Committee of Award. All applications must be sent to the Secretary, 35 Portman Square, London, W. 1, by the first of February of any given year. The Secretary, on request, will furnish the necessary memoranda and application forms.

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The Commonwealth Fund offers also a number of postgraduate medical fellowships with certain restrictions as follows:

Through the **Division of Public Health**, postgraduate fellowships are made available for the purpose of instruction, more especially in the fields of general medicine, pediatrics, and obstetrics, to physicians in general practice in rural areas in the three states in which the Division is assisting in raising the level of public health practice, namely in Mississippi, Tennessee and Massachusetts. These fellowships are awarded for periods of from one to four months. Each fellow receives a stipend of $250 a month during the period of the award plus tuition and travel expenses, from his home to the medical school and return.

Through the **Division of Rural Hospitals**, postgraduate fellowships are made available to a limited number of physicians having practice in the hospital areas surrounding the seven general community hospitals which have been developed with assistance from the Fund, namely at Murfreesboro, Tennessee; Farmville, Virginia; Glasgow, Kentucky; Farmington, Maine; Beloit, Kansas; Wauseon, Ohio; and Kingsport, Tennessee (the last now under construction). These

fellowships are ordinarily for four months' periods as refresher courses except for study in special fields of medicine and surgery when they are usually for longer periods. Each fellow receives a stipend of $250 a month during the period of the award plus tuition and travel expense from his home to the medical school and return, except that if the award is for a period longer than four months the monthly stipend may be reduced somewhat.

CORNELL UNIVERSITY MEDICAL COLLEGE

New York City, N. Y.

Animal Research Farm $25,000

Yearly grant (originally by the General Education Board, 1926) now sponsored by the Rockefeller Foundation for studies in experimental anatomy, particularly inheritance and growth in relation to internal secretions.

Experimental Biochemistry $8,200

Original grant, 1910 (formerly the Johnston Livingston Fund) for experiments in biological products.

Sex Research Fund $3,000

Grants since 1923 by the National Research Council Committee on Sex Research for studies in the physiology and morphology of sex in mammalia.

Tuberculosis Fund $7,250

Grants since 1926 by the National Tuberculosis Association to gain more knowledge in problems presented by tuberculosis, to study the chemistry of the living cells of the animal body that are most active in response to this infection, the biology of tubercle bacilli and the relation of the cells of blood in destructive action on the tubercle bacillus.

Sage Tuberculosis Research Fund $2,500

Grants since 1927 for research in metabolism of tubercle bacilli and tuberculous tissue. Work carried on at the Russell Sage Institute of Pathology, but administered through Cornell University Medical College.

Leucemia Lymphoma Fund $15,000

Transferred to Cornell University Medical College, June, 1932. Grant received through Dr. Eugene L. Opie for leucemia research to be expended over a period of years, budget 1933-34.

Macy Surgical Fund $1,500

Grant, June, 1933, by the Josiah Macy, Jr. Foundation for experimental surgical research.

Epidemiology Studies $3,550

Grant in 1933 from the Rockefeller Foundation for studies in the epidemiology of tuberculosis.

Tuberculosis Research Fund.....$12,000
Grant by the Rockefeller Foundation for tuberculosis studies.

Given Surgical Fund.....$5,425.50
Gifts since 1925 by Mrs. Irene Heinz Given for teaching and research in surgery.

Surgery Transfusion Fund.....$2,354
Gifts since 1925 by Dr. John A. Hartwell, Dr. Harold E. Santee and Mrs. Irene Heinz Given for blood transfusions for needy patients in Bellevue Hospital, New York City, and for scientific research.

Peters Fund.....$1,075
Gift under the will of Mary L. Walker Peters in memory of her husband, Charles Grenville Peters. Income to be used for cancer research. None of such income to be used for the construction of buildings. Established 1930. (Principal, $25,000.)

Thompson Fund.....$225
Gift of Mrs. Carlos de Heredia in 1929 to promote interest in the study or teaching of industrial diseases. (Principal, $5,000.)

Daniel J. Tompkins Fellowship Fund.....$1,500
Gift under the will of Mrs. Ada Parsons Tompkins as a foundation for a postgraduate fellowship in medicine and surgery. (Principal, $30,000.)

Bernheim Fund.....$3,300
First gift by Dr. Alice R. Bernheim July, 1932, for research in peripheral vascular diseases.

Macy Foundation Transfusion Research Fund.....$1,000
A research fund received from the Macy Foundation in February, 1934, to study the effect of repeated transfusions on the process of aging.

Solon P. Sackett Memorial Fund.....$515.99
Fund left Cornell University in 1931 by the late Colonel W. Sackett. Income only from said fund to be expended for research purposes in the Cornell University Medical College at Ithaca. Yearly appropriations from this fund to be administered by a Committee composed of the President of the University and the heads of the departments that will participate in the fund. (Principal, $12,000.)

EUGENICS RESEARCH ASSOCIATION

Cold Spring Harbor, Long Island, N. Y.

Funds of Subsidy Committee.....about $5,000
Small sums that reach the Subsidy Committee for the advancement of some particular study, as well as appropriations made by the Association, are used to further research and especially to aid beginners to bring their investigations to a successful termination.

The total amount that has been available in recent years is about $5,000.

For the current year this subsidy takes on the nature of a prize contest in research on the genetics of mental disorders.

FENGER MEMORIAL FUND

629 S. Wood Street, Chicago, Ill.

Fenger Memorial Fund.....annually available $400-$600

Established 1910, to aid medical investigation. Present amount, $11,500. The fund is administered by the John McCormick Institute for Infectious Diseases, Chicago, Ill., to which applications for grants may be made.

GENETIC FOUNDATION

Henry W. Toll, Secretary
730 Equitable Building, Denver, Colo.

Established 1921, incorporated 1922, to gather and to disseminate information concerning mutations and other principles of heredity, from the standpoint of the improvement of the human race. The Foundation is a small one, and its income is used to finance lectures and prize essays.

MEDICAL ASSOCIATION OF GEORGIA

Allen H. Bunce, M.D., Secretary
139 Forrest Avenue, N. E., Atlanta Ga.

Crawford W. Long Memorial Prize.

An award for the best original research work by any member of the Medical Association of Georgia, reported at the annual session each year. Offered by an anonymous donor.

Lamartine Griffin Hardman Loving Cup.

Deposited in the treasury of the state of Georgia to be withdrawn annually to engrave the name of some member of the Medical Association of Georgia who has made some important contribution to medicine with a statement of his accomplishment.

JOHN SIMON GUGGENHEIM MEMORIAL FOUNDATION

551 Fifth Avenue, New York, N. Y.

Fellowships for Research Abroad or in the United States.....$2,000

The Fellowships are intended for men and women of high intellectual and personal qualifications who have already demonstrated unusual capacity for productive scholarship or unusual artistic talent. They are open to men and women, and to married or unmarried candidates. The trustees prescribe no age limits, but the appointees must be old enough to have shown decided ability in their particular

subject. It is expected that ordinarily they will not be younger than 25 and not older than 40 years. The Fellowships will be open to citizens, or in exceptional cases, to permanent residents who are not citizens, of the United States, irrespective of race, color or creed.

The stipend will in the normal case not exceed $2,000, for a year of twelve months. The tenure of Fellowships will be adjusted to the purpose and scope of the studies of each individual. Appointments will be made ordinarily for one year, but plans which involve two years' study will be considered by the Trustees. In special cases the Trustees will grant Fellowships for shorter terms with appropriate stipends. Members of the teaching profession who have received sabbatical leave on full or part salary will be considered on equal terms with other candidates.

The widest possible liberty will be given to Fellows in carrying out their work. Fellowships are not restricted to candidates interested in any particular field of knowledge, nor are they confined to academic or artistic subjects. They are open as well to candidates interested in the working of foreign systems of government, in the study of agricultural, social or business conditions, or in productive scholarship in the fields of the various learned professions—the only proviso being that in each case the candidates should look forward to making the results of their study available to the public and not merely to the utilization of them for their own private success. Applications for Fellowships should be made in writing to the Secretary, on or before November 1, by the candidates themselves in the form prescribed.

HARVARD UNIVERSITY MEDICAL SCHOOL

Boston, Mass.

Austin Fellowships ..... **each $900**

A certain number of teaching Fellowships have been established from the income of the Austin Fund and assigned to the Medical School.

Edward Hickling Bradford Fellowship **$1,250**

May be used for research or instruction separately or in connection with any other foundation in such manner as the Corporation may from time to time prescribe.

The James Jackson Cabot Fellowship **$700**

Income remaining after adding a certain percentage to the principal each year is preferably, but not necessarily, to be used for a fellowship "to aid and encourage practical work in scientific medicine."

Jeffrey Richardson Fellowship **$1,500**

For a Harvard Medical School graduate who desires to continue his studies either here or abroad.

Henry P. Walcott Fellowship in Clinical Medicine **$1,700**

Provides for support of a Fellow in Clinical Medicine who shall receive his appointment from the Corporation on nomination by the Jackson Professor of Clinical Medicine, and who, while the holder of the Fellowship, shall not engage in private practice but devote his time to teaching and clinical research work.

Arthur Tracy Cabot Fellowship **$1,400**

The holder is not ordinarily to engage in active private practice for the duration of the award, but is to devote his time to the advancement of surgery, whether in the United States or elsewhere. Nomination, by preference, to be in the hands of the Moseley Professor of Surgery.

William O. Mosely, Jr. Traveling Fellowships..... **each $1,800**

For students who have attended the School for three or four years, to enable them to continue the study of medicine in Europe. Either two or three Fellowships will be awarded from the income, which is about $5,000.

The Parker Fellowships..... **three at $1,500**

For instruction, education, and maintenance of one or more students of eminent natural talents or genius for some one or more of the sciences taught in the University. Available for study at the University or in foreign countries.

Bullard Fellowships:

The George Cheyne Shattuck Memorial Fellowship..... **$325**

The John Ware Memorial Fellowship **$300**

The Charles Eliot Ware Memorial Fellowship..... **$300**

Income from any one or all of these may be paid to any student or member of the medical profession who shall be selected by the Administrative Board of the Medical School to make such original investigations in medical science as in their opinion will be most useful to the profession and to the community. Results shall not be published as a research performed under grant of a Bullard Fellowship unless the work has received the approval of the Committee. If published with approval of the Committee, mention shall be made of the fact that the work was done under a Bullard Fellowship. Holders of Bullard Fellowships are required to do an amount of work equivalent to not less than ten hours a week during the academic year and to present to the Committee at the end of the academic year a report on the amount and result of work performed.

The Frederick Sheldon Fund for Traveling Fellowships.

Available for holders of any degree from Harvard University. Open to all students. Income about $20,000 from which about thirteen Fellowships are awarded.

SCHOOL OF PUBLIC HEALTH

Public Health Fellowships.
The School offers a limited number of fellowships to students of high scholarship and exceptional ability. Applications should be filed with the Secretary of the School of Public Health.

The Gordon Bartlett Scholarship **$450**
Preference given to graduates of Dartmouth College. Ordinarily divided between two men.

The John White Browne Scholarship **$1,050**
By vote of President and Fellows of Harvard College, this Scholarship is to be awarded by the Dean of the Medical School to a young man (graduate or matriculated student) of unusual promise to enable him to pursue research investigations for a year at the Harvard Medical School or elsewhere.

The Charles Elliott Perkins Scholarships ..... **two at $650**
To be offered each year to a graduate of an Iowa College or University in any of the graduate or professional departments of Harvard University.

The James A. Rumrill Scholarships ..... **two at $450**
Offered each year to a properly qualified graduate of a college or university in Virginia, North Carolina, South Carolina, Florida, Georgia, Tennessee, or Kentucky. Available to students in any part of the University.

Dr. William Hunter Workman Scholarship **$1,100**
To enable one or more graduates of Harvard Medical School to pursue postgraduate studies in medicine in this country or abroad. In exceptional cases, fourth year medical students will be eligible.

HECKSCHER INSTITUTE FOR CHILD HEALTH

Dr. I. Newton Kugelmass, Director
1060 Park Avenue, New York

Established 1930 by the Heckscher Foundation for Children for the practice of preventive pediatrics with under-privileged children. The clinical observations are correlated with research studies in all departments of peditarics, including dentistry **$25,000**

HOSPITAL FOR JOINT DISEASES

1919 Madison Avenue, New York City

Henry W. Frauenthal Travel Scholarship **$2,400**
Established 1927 by the late Dr. Henry W. Frauenthal. Available to graduates of Hospital for Joint Diseases House Staff and members of Hospital for Joint Diseases Visiting staff.

This Scholarship is open for both men and women. The educational requirement is that the applicant must be a graduate in medicine. Other requirements: special interest in the sciences allied to **orthopedic surgery** or the skeletal system. The places of study are six months in the United States and six months in Europe. Applications should be filed during the months of January, February and March, and should be addressed to Dr. J. J. Golub, Director, Hospital for Joint Diseases, 1919 Madison Avenue, New York City.

Mr. and Mrs. Frederick Brown Orthopedic Research Fellowships
(2) $2,400

Established 1927 by Mr. and Mrs. Frederick Brown.

This fellowship is open for both men and women. The educational requirements are research and investigational experience and the necessary university education with science or doctor of medicine degree. Other requirements: Interest in any field of pure science or the art and science of medicine leading to further study of any material relating to **orthopedic surgery** or the skeletal system.

The fellowship is available for study at the Hospital for Joint Diseases. Applications may be filed any time during the year and should be addressed to Dr. J. J. Golub, Director, Hospital for Joint Diseases, 1919 Madison Avenue, New York City.

LILLIA BABBITT HYDE FOUNDATION

535 Fifth Avenue, New York, N. Y.

The purpose of this foundation is, in part, "to promote and carry on research work necessary to the proper **study, relief or cure of disease.**"

INSTITUTE OF INTERNATIONAL EDUCATION

2 West 45th Street, New York City

Exchange Fellowships, open to American citizens of either sex, preference given to unmarried candidates under 30 years of age. Offered under the auspices of the various Exchanges with foreign countries. Not primarily for medical study, but occasionally grants covering board, lodging and tuition are made to young doctors or graduate students for research in some branch of **medical science;** available for study in Czechoslovakia, Germany, Hungary and Switzerland; with tuition grants in Vienna.

INTER-STATE POSTGRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

Joseph Schneider Endowment $10,800

Established 1924 by the late Dr. Joseph Schneider of Milwaukee, Wisconsin to "foster the development of research work and reports of scientific progress with particular reference to constitutional dis-

eases and their effect upon the eye and optic nerve." The results of such research work are presented by invitation at the annual International Medical Assembly of the Association, published in the organization's yearly Proceedings and disseminated in pamphlet form by the Director, Dr. H. G. Langworthy, 394 West Tenth Street, Dubuque, Iowa.

Foundation Fund (General Trust Funds).

Organized in 1919 by the present treasurer and director of foundation funds, Dr. H. G. Langworthy, for the purpose of building up a perpetual trust fund, the income of which will help defray the expenses of full-time teachers and clinicians who appear on the annual International program of the Inter-State assemblies. The Association also, through its yearly traveling assemblies in Europe and the appearance of internationally known teachers from abroad on its program, has fostered, as one of its principal aims, the building up of an international good fellowship for America in foreign fields. The physicians over the United States rather generally have contributed to the raising of the organization's sustaining trust fund. For information address Dr. H. G. Langworthy, 394 West Tenth Street, Dubuque, Iowa.

STATE UNIVERSITY OF IOWA COLLEGE OF MEDICINE

Iowa City, Iowa

Laura Spelman Rockefeller Fund.

Established in 1928 for research in **Child Welfare** work. Original amount, $818,000. Present amount, annually available, $101,000. Pediatrics (a) Established in 1929 by Mead Johnson and Company for research in infant metabolism. Original amount, $6,000. Present amount, annually available, $7,200.

(b) Established in 1933 by the Corn Industries Research Foundation for research in the study of certain clinical properties of **dextrose.** Original amount, $500. Present amount, annually available, $500.

Art (a) Established in 1932 by the Carnegie Foundation for the Advancement of Teaching, for **genetic studies** in artistic capacity. Original amount, $12,000. Present amount, annually available, $6,000. (b) Established in 1931 by the Carnegie Corporation for research in **art.** Original amount, $6,000. Present amount, annually available, $2,000.

Chemistry (a) Established in 1932 by Lever Brothers Company for research in **anti-oxygens.** Original amount, $2,270. Present amount, annually available, $3,246.

(b) Established in 1933 by the Fleischmann's Yeast Company for research on the nutritive value of **yeast** in bread. Original amount, $2,200. Present amount, annually available, $2,200.

(c) Established in 1931 by Live Stock and Meat Board through the National Research Council for research in **Liver Proteins.** Original amount, $1,500. Present amount, annually available, $750.

Physiology. Established in 1926 by the Rockefeller Foundation for research in physiology of thebrain. Original amount, $30,000. Present amount, annually available, $2,000.

Botany. Established in 1932 by the Fish and Game Commission and the Board of Conservation for research in blue-green algae. Original amount, $1,200. Present amount, annually available, $1,352.

Research in Problems of Sex.

Established in 1926 by the National Research Council. Original amount, $5,000. Present amount, annually available, $4,500.

In addition to the above funds the University carries on extensive research estimated at $150,000 per year.

WILLIAM G. IRWIN CHARITY FOUNDATION

Suite 2204-09 Russ Building, San Francisco, Cal.

Research Fund.

Part of the purpose of the Foundation is to promote medical researches or other scientific uses designed to improve the physical condition of mankind. Aid is only given to such charitable uses as do or may exist in the Hawaiian Islands or the State of California. Amount of fund, $1,464,000.

THE JEFFERSON MEDICAL COLLEGE OF PHILADELPHIA

Philadelphia, Pennsylvania

Corinna Borden Keen Research Fellowship **$1,000**

Open to graduates of the Jefferson Medical College of not less than one, nor more than ten years' standing. Whenever the accumulated income amounts to $1,000, a Fellowship will be awarded by the Trustees, on recommendation of the Faculty. A condition of the award is that the Fellow shall spend at least one year in Europe, America, or elsewhere in medical research in such subject, or subjects, as may be approved by the Faculty; and that he shall publish at least one paper embodying the results of his work as the "Corinna Borden Keen Research Fellow of the Jefferson Medical College."

Simon Gratz Research Fellowship **$1,000**

Open to graduates of the Jefferson Medical College, the accumulated income to be awarded during each period of three years to that graduate who shall be named by the Faculty of the College as most worthy to receive it for what he shall have done within five years next preceding the award for the advancement of the medical or surgical treatment of disease or in research work that has been productive of results having a real practical value.

J. Ewing Mears Teaching and Research Fellowship.....**$3,500**

Established by bequest of the late Dr. J. Ewing Mears, the income of the fund to be spent in defraying the expenses of a course of study of conditions that may better the physical and moral qualities of future generations; reserving to the Jefferson Medical College the right to determine the particular aspects of the science taught.

Strittmatter Teaching Research Fellowship **$175**

Established in 1923, a trust fund for the sole purpose of creating and manitaining (or if already created, to apply to the maintenance and support of), a Research Laboratory, composed of inter-related laboratories of **Physiological Chemistry, Pharmacology and Bacteriology**, in which the Director and presiding Doctor shall be selected by a vote of the whole teaching staff of the Jefferson Medical College and Hospital, with the President of the Jefferson College Alumni Association, in conjunction with the Board of Trustees. The suggestion of the grantor is that special attention be given to the study of cancer, tuberculosis, and the rapidly increasing heart diseases, and such other causes of suffering and death as may from time to time appeal to the medical profession, and that the facilities of the laboratories be always open to the Alumni of the Jefferson Medical College under such restrictions and conditions as will or may be made by the College and the presiding teacher, to develop the best results to science and humanity, and bring about cordial and inspiring sympathy and enthusiasm between the College and Alumni.

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

Baltimore, Maryland

John D. Archbold Fellowships in Medicine.

These fellowships are awarded annually. The number awarded and the individual stipends vary from year to year. Application should be made to Dr. Warfield T. Longcope, Professor of Medicine, address: The Johns Hopkins Hospital, Baltimore, Maryland.

William Stewart Halsted Fellowships in Surgery.

Two fellowships are usually awarded annually. The stipend varies from year to year. Application should be made to Dr. Dean Lewis, Professor of Surgery, address: The Johns Hopkins Hospital, Baltimore, Maryland.

Hunterian Fellowship in Surgery.

One fellowship usually awarded annually. The stipend varies from year to year. Application should be made to Dr. Dean Lewis, Professor of Surgery, address: The Johns Hopkins Hospital, Baltimore, Maryland.

JOHNS HOPKINS UNIVERSITY SCHOOL OF HYGIENE AND PUBLIC HEALTH

Scholarships, twelve. Open to men and women for graduate study in **hygiene and public health.** Granted for one year at a time, but may be renewed for a second year. Scholarship provides tuition. Applications should be filed before April 1 with the Dean of the School of Hygiene and Public Health.

UNIVERSITY OF KANSAS SCHOOL OF MEDICINE

Kansas City, Kansas

Boylan Research Fellowship in Surgery **$1,500**

The amount of this fund is approximately $60,000. The income is used for research in **surgery,** including the salary of the fellow, amounting to approximately $1,500 for the coming year. In the past, $2,400 has been paid as salary.

Residencies (Fellowships) ..... **$600 each**

Three half-time fellowships in one of the **medical sciences** in collaboration with one of the clinical branches. Usually these residencies are taken in the department of pathology, preparatory to advanced work in the clinical departments of surgery, obstetrics and gynecology, and medicine.

Research Fund **$700**

Available for special problems in the various **clinical** departments of the school.

Porter Fund **$30,000**

The income from this fund is used as follows: $300 a year for an **undergraduate scholarship,** and the balance is used for stimulating **research,** for providing funds for publication of **research** problems and for any other purpose recommended by the faculty.

W. K. KELLOGG FOUNDATION

Battle Creek, Michigan

The Foundation has provided fifty-three two weeks postgraduate courses in connection with the recognized medical schools and hospitals in Chicago. Physicians have gone in groups and the programs have been carefully arranged in advance to make the most of the opportunity. However, these are not fellowships in the ordinary sense of the word and are offered only to physicians within the three county area involved in the community health project in southwestern Michigan.

The Foundation has also assisted in a limited degree in providing speakers for the medical societies concerned within this area.

LUCIUS N. LITTAUER FOUNDATION

235 Fourth Avenue, New York, N. Y.

Research and Fellowship Fund.

This Foundation, established January, 1929, by a gift of $1,100,000 by Mr. Lucius N. Littauer, is to be used to "enlarge the realm of human knowledge, to promote the general, moral, mental and physical improvement of society, so that the sum total of human welfare and wisdom may be increased and the cause of better understanding among all mankind promoted."

The exact program of the Foundation and the exact amounts for Fellowships are not yet fully determined, but the directors will be governed largely by the ideas of Mr. Littauer during his lifetime in their administration of the fund. In the medical field they will support institutions and medical research work on the cause, cure, and prevention of pneumonia, diabetes, degenerative diseases of the heart, and cancer. Scholarships will be awarded, in the form of loans, to high school, college and graduate professional students of marked ability, and in case the recipient of the fund elects to serve humanity by research rather than in a competitive gainful occupation the loan may be cancelled by the action of the directors.

JOSIAH MACY, JR. FOUNDATION

565 Park Avenue, New York

Established in 1930; principal account, $4,158,462.63; Mrs. Walter G. Ladd's Special Fund, $202,689.16.

The purposes for which it is formed are:

(a) The application to charitable purposes of the income of such property as the Corporation may from time to time possess, including the giving of the same to any other charitable corporation or corporations;

(b) The application to charitable purposes of the income of such property as the Corporation may from time to time possess to initiate, stimulate, develop and support scientific investigations of the fundamental aspects of health, of sickness, and of methods for the relief of suffering.

The Foundation does not take an active part in any of the projects which it supports. In some instances the Foundation has taken the initiative in suggesting or correlating research plans and in assisting the organization of projects to which it subsequently offered financial support.

According to the original intentions, most of the grants were made for projects in the medical sciences, some for general investigations and orientation in medical education. Appropriations have been made for the study of degenerative diseases, arteriosclerosis, migraine, a psychiatric consultation service in a pediatric clinic, and the cortical hormone.

UNIVERSITY OF MANITOBA FACULTY OF MEDICINE
Winnipeg, Canada

Gordon Bell Memorial Fellowships **$1,100**

The Medical Research Committee of the University, on or before June 1st of each year, elect a Fellow designated the Gordon Bell Fellow of the College of Physicians and Surgeons of Manitoba. The College provides the fund. Applicants, men or women, must have graduated or be about to graduate in Medicine from the University of Manitoba, or be registered practitioners in the Province of Manitoba. The tenure of the Fellowship is one year, with re-election in exceptional cases.

Minimum stipend $1,100, payable in monthly installments of $100 from September 30th to May 31st and the balance on June 30th. The Fellow will devote his time to research in the Gordon Bell Research Laboratory on problems designated by, and under the direction of the Medical Research Committee. Applications addressed to the Secretary, Medical Research Committee, Medical College, Winnipeg, must be received on or before April 1st.

Prowse Prize **$250**

To consist of a bronze medal and two hundred and fifty dollars in cash, and to be awarded for such purpose and under such conditions as the present Dean of the Faculty may decide. It shall be given annually for the report on an original investigation. The prize shall be open to competition to Fourth and Fifth Year students, and to graduates in medicine of this University of not more than ten years' standing.

Fenton Bequest

Frances Emily Fenton left a sum of money which should now yield about $200 or $250 a year, to be used in anti-tuberculosis measures. Recommendations of the Dean and Faculty for the use of this fund, given effect to by his Honor the Chief Justice of the Province, are as follows:

A—Fellowship for research work, clinical or laboratory, at Manitoba Sanatorium, Ninette.

B—Prize for Essay or report on original work, open to students of the Manitoba Medical College.

UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE
Baltimore, Maryland

Dr. I. E. Emerson Fellowship in **Pharmacology.**

Dr. Charles M. Hitchcock Fellowships (3).

To be awarded in **medicine, surgery or obstetrics.**

Dr. John F. B. Weaver Fellowships (3).

To be awarded in **anatomy, physiology, pathology, biological chemistry or bacteriology.**

MASSACHUSETTS EYE AND EAR INFIRMARY

243 Charles Street, Boston, Massachusetts

Howe Laboratory of Ophthalmology for Research.

Fund of Harvard Medical School. Capital of $500,000, the income of which should be spent in the Infirmary for research.

MASSACHUSETTS GENERAL HOSPITAL

Boston, Massachusetts

Dalton Scholarship Fund.

For investigation in the science of **medicine**, two scholarships with an income of $500 each will be awarded not later than June 15, for the year beginning Sept. 15, 1934, to the candidate recommended by the General Executive Committee of the Hospital. The holders of these scholarships are required to do original work in subjects to be designated.

Warren Triennial Prize:

Prize for 1934 will be $500. Awarded every three years to the best dissertation, considered worthy of a premium, on some subject in **physiology, surgery, or pathological anatomy**, the arbitrators being the General Executive Committee of the Massachusetts General Hospital.

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE

3 Joy Street, Boston, Mass.
Charles E. Thompson, Secretary
East Gardner, Mass.

Special Research Fund.

$50,000, or so much thereof as may be necessary from the Laura Spelman Rockefeller Memorial, for the continuation over a period of not less than two nor more than four years, beginning December 1, 1930, for statistical studies in the field of **psychiatry.**

McGILL UNIVERSITY FACULTY OF MEDICINE

Montreal, Canada

James Cooper Fellowships ..... **total of $3,500**

A fund of $60,000 was donated in 1912 to promote study and research **in internal medicine.** The annual income of $3,500 distributed according to the needs of research in the Medical School.

A. A. Browne Memorial Fellowship **$1,000**

For Advancement of **Medical Science.** Open to graduates of any recognized Medical School, special preference being given to the subjects of **obstetrics and gynecology.** Sum of $10,000, which has been increased since the original donation.

Clara Law Fellowship **$1,200**

For the furtherance of research in the laboratory of the Department of **Obstetrics and Gynecology.**

James Douglas Research Fellowship **$1,250**

The sum of $25,000 was donated, the proceeds to be devoted to co-ordinated research in the laboratories of **pathology** in or associated with the University.

J. H. B. Allan Scholarship **$300**

Awarded to the graduate of this Faculty who shall present the best thesis written during his period of residency in one of the teaching hospitals connected with McGill University.

MEAD JOHNSON & COMPANY

Evansville, Indiana

Vitamin A Research Award

Main Award, clinical **$15,000**

This award will be made to that investigator (or group of investigators) who (1) Determines the clinical value of vitamin A (if any) in human medicine, or (2) Determines the vitamin A requirements of human beings, or (3) Determines whether vitamin A in amounts more than is contained in a well-balanced diet is of benefit in human physiology.

Candidates for the award must be physicians or biochemists, residents of the United States or Canada who are not in the employ of any commercial house. Manuscripts must be accepted for publication before December 31, 1934, by a recognized scientific journal. Investigations shall be essentially clinical in nature, although animal experimentation may be employed secondarily. There are no restrictions regarding the source of Vitamin A employed in these investigations.

If, in the opinion of the judges, no investigation satisfactorily makes any one of these determinations, the main award will be postponed until Dec. 31, 1936, and papers published in the intervening two years will be considered eligible.

Second (Laboratory) Award **$5,000**

This award will be made on the basis of papers published or accepted for publication on or before Dec. 31, 1934. It will be made irrespective of whether or not the Main Clinical Award is postponed.

1. If the main award is postponed, that paper most adequately presenting biologic, physiologic and/or pathologic data which may later serve for, or point the way toward an evaluation of the vitamin A requirements of human beings will be selected.

2. If the main award is not postponed, that paper which contributes most to the understanding of the physiology of vitamin A and/or the pathognomy of avitaminosis A will be selected for the second award.

The Committee on Awards consists of nine eminent authorities who are not connected with Mead Johnson & Company.

For further details, investigators may correspond with Dr. Warren M. Cox, Secretary to the Judges, Mead Johnson Research Laboratory, Evansville, Ind., U. S. A. It is suggested that the secretary's attention be drawn to papers when they are accepted for publication.

MEMORIAL HOSPITAL

106th St. and Central Park, West, New York, N. Y.

Huntington Fund.

Established 1902, for cancer research. Principal, $100,000. Income available.

Rockefeller Fund.

Established 1927; renewed 1932. $25,000 annually for five years.

Harkness Fund.

Established 1927, for research. Present amount $50,000. Income available.

Littauer Fund.

Established 1927, for five years, renewed 1933. $2,000 annually.

Fuller Fund.

Annual grant of $3,000 from Trustees of Fuller Fund.

International Cancer Research Foundation.

Annual grant, $2,000.

Peters Fund.

Established 1932. Principal, $25,000. Income available.

METROPOLITAN LIFE INSURANCE COMPANY

New York, N. Y.

Fund received from the Trustees of the Hegeman Estate, for the purpose of erecting and maintaining a research laboratory at Mt. McGregor, N. Y., as a memorial to the late John R. Hegeman. Total amount received was approximately $350,000. The erection and equipment of the laboratory reduced this fund to about $300,000, the interest on which is used to support and conduct research activities in the laboratory.

The company, during the past decade or more, has initiated and carried out a number of inquiries, investigations, and experiments that constitute important contributions to research. These have been financed entirely by the company with the exception of occasional studies where other agencies such as voluntary health groups, universities, and governmental units have participated and cooperated.

UNIVERSITY OF MICHIGAN

Ann Arbor, Mich.

Cancer Research Fund ..... **monthly $3,750**

Established 1927, by anonymous donors, for study of cancer and other growth processes. $3,750 available per month for five years, totaling $225,000.

Thomas Henry Simpson Memorial Institute for Medical Research.

Established 1927, by Mrs. Thomas Henry Simpson of Detroit, for research on cause and cure of pernicious anemia; provision is made for directing research in some other direction if in future it seems advisable. Gift consists of building with equipment, valued at $235,000, and endowment fund of $250,000 as funds available in carrying on institute. In addition to income from endowment, University appropriated in 1927 $19,500 from general funds.

Roy Bishop Canfield Memorial Fellowship in Otolaryngology.

Established in 1932 to continue the training of young graduates to carry on successfully work in otolaryngology.

The interest on the endowment of $35,000 is to be given to young men, physically and mentally equipped but perhaps financially unable to cary on with honor work in this special field of medicine—young men, not only of ability but of such sincerity of purpose and of effort that they will uphold the high standards to which Doctor Canfield pledged himself.

Reuben Peterson Instructorship and Fellowship in Obstetrics and Gynecology.

The sum of $2,500 was provided by an anonymous donor for the maintenance of this fellowship during 1932-1933 and also during 1933-34.

John E. Weeks Scholarship for Research Work in Ophthalmology.

Established in 1921 by a gift of $10,000, income on which is awarded annually.

George Slocum Research Fund.

One-half the income from this fund ($1,000) shall be added to the Weeks Research Fund annually as income. The other half of the income shall be added to the principal until such time as the total income shall amount of $1,000 a year, at which time the whole income may be used for research in Ophthalmology in such a manner as the president shall advise.

Mary Furnum Bequest.

The Mary J. Furnum bequest of $1,000 for sick children, made in 1910, was set aside by the Board of Regents for the purpose of assisting in the purchase of laboratory apparatus for the Palmer Ward of the University Hospital for investigation in diseases of infancy and childhood, making possible the carrying on of several pieces of research work which have contributed to the advancement of our knowledge of diseases peculiar to this period of life.

W. K. Kellogg Research Fund.

In 1932, the W. K. Kellogg Company of Battle Creek, Michigan, made available a fund of $20,000 to be used for conducting research to obtain further knowledge of the comparative effects on human subjects of caffein containing and non-caffein containing beverages. The expendable funds left in this grant June 30, 1933, were $4,227.91.

Zonite Products Incorporation Research Fund.

A fund of $6,000 a year for a period not to exceed two years granted to study the pharmacological properties of the Mexican agave plant.

Upjohn Company Research Award.

A fund of $2,000 granted to the University of Michigan Medical School to study the effects of the intravenous administration of a special digitalis preparation manufactured by the Upjohn Company.

Parke Davis and Company Research Award.

A fund of $250 a month for a period of 6 months granted to the Simpson Memorial Institute for study of the pharmacological properties of a preparation of ventriculin with iron.

Parke Davis and Company Ventriculin Fund.

A fund made possible by royalties from patents on ventriculin manufactured by Parke Davis and Company and used for research work in the Simpson Memorial Institute. This fund had expendable monies on June 30, 1933 of $10,775.78.

Levi L. Barbour Oriental Girls Scholarship.

Established in 1917 by a gift of $100,000 from the late Levi L. Barbour, of Detroit, a former Regent of the University. Later gifts by Mr. Barbour increased the fund to over $600,000. The income is used for the care, support, maintenance, and schooling in the University of Michigan of young women of and from Oriental countries. Each scholarship includes an annual stipend of $800 and matriculation and annual fees. These scholarships are administered by the Barbour Scholarship Committee (Professor W. Carl Rufus, Secretary). The income available for use June 30, 1933, was $8,709.12. Some scholarships are available for postgraduate work in medicine.

Drug Addiction Research Fund.

A grant of $10,000 from the Committee on Drug Addiction of the Division of Medical Science of the National Research Council for study of the biological action of various synthetic substances prepared in the University of Virginia by chemical methods in the field of drug addiction. Such studies are to be carried on under the direction of Professor Charles W. Edmunds, and Doctor Nathan B. Eddy is in immediate charge of this work.

This fund has been added to since May of 1930 and during the year of 1932-33 had added to it $20,749.45. The balance June 30, 1933, was $190.92.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL AND THE MAYO FOUNDATION

Minneapolis and Rochester, Minnesota

Fellowships

Through the Medical School and the Mayo Foundation the University of Minnesota offers a limited number of three-year fellowships for graduate study in the various special fields of medicine. The fellowships are open to graduates of class "A" medical schools who have had a year's acceptable internship and laboratory service after graduation. The work is planned to give men of good ability opportunity to fit themselves for teaching, research or consultation practice in a special field. It may lead to a graduate degree, Master of Science or Doctor of Philosophy with special field named in the diploma.

Teaching fellowships in the Medical School are now established in surgery, internal medicine, obstetrics, ophthalmology and otolaryngology, radiology, mental and nervous diseases, and pediatrics. Fellowships are also available in the University Health Service. They carry stipends (adjusted to local living expenses) of $600 the first year, $600 the second, and $900 the third. These teaching fellows are required to devote their entire time (excepting an annual vacation of three weeks) to graduate work, including a small amount of teaching. Similar teaching fellowships have been established in the fundamental laboratory departments of the Medical School in anatomy (including histology and embryology), physiology and physiological chemistry, pathology, bacteriology and pharmacology. These fellowships carry stipends (adjusted to local living expenses) of $700 the first year, $900 the second, and $1,100 the third. In some cases the fellowships are for the school year only (September to June) with proportionately smaller stipend. They require a small amount of teaching, the remainder of the time being devoted to graduate work leading to advanced degrees.

The Mayo Foundation carries basic and clinical fellowships in clinical and experimental surgery, orthopedic surgery, urology, obstetrics and gynecology, otolaryngology and rhinology, ophthalmology, proctology, anesthesia, clinical and experimental medicine, neurology, dermatology, pediatrics, radiology, pathology, bacteriology, physiologic chemistry, and biophysics. Fellowships in clinical branches pay stipends (adjusted to local living expenses) of $840 per year, and in preclinical branches $840, $900, and $960 for the first, second, and third years respectively. They require full time with an annual vacation of two weeks.

In the Medical School, appointments are made as vacancies occur. Nominations for fellowships in the Mayo Foundation are made each quarter, beginning with October 1 for residence to begin three to six months later or as vacancies occur. Each applicant is notified of his nomination immediately after it is made and his acceptance or rejection thereof requested.

The Shevlin Fellowship in Medicine yielding $500 and tuition permits work in any department of medicine in the Medical School, preference being given to the laboratory sciences. Application should be in the hands of the Dean of the Graduate School before March 1.

The Miller Hospital Clinic, St. Paul, supports four clinical fellowships, one each in surgery, medicine, ophthalmology and otolaryngology, and obstetrics and gynecology. A clinical fellowship in tuberculosis is provided at Pokegama Sanatorium. Appointments are made as vacancies occur. Apply through the Graduate School.

All appointments are made for one year and are renewable annually for a period of three years upon the basis of satisfactory progress in the work pursued. Requests for blanks for application for fellowships should be addressed to the Dean of the Graduate School, University of Minnesota, Minneapolis, or to the Director of the Mayo Foundation, Rochester, Minnesota.

Scholarships.

There are at the Medical School a limited number of scholarships without stipend, carrying free tuition with opportunity for graduate study in any of the clinical departments.

Several of the departments in the Medical School (including anatomy, physiology, and pathology) have paid assistantships which may furnish means of self-support while the holder is pursuing graduate work. For further information address the Dean of the Medical School.

A few qualified assistants, such as traveling fellows from other universities, officers of the medical corps of the United States Army, Navy, or Public Health Service, designated as special students and not candidates for degrees, may be accepted at Rochester in laboratory and clinical branches for short periods. The number is necessarily limited in order not to interfere with the work of resident fellows.

Correspondence concerning this work should be addressed to the Director of the Mayo Foundation, Rochester, Minnesota.

MONTEFIORE HOSPITAL FOR CHRONIC DISEASES

Gun Hill Road, New York, N. Y.

Schiff Research Laboratory Fund **$26,500**

Established 1909, for research in **medicine**. Original amount $100,000. Present amount $590,000.

Wolff Cancer Research Fund **$2,250**

Established 1912, for the study of the **cancer** problem. Original amount $50,000. Present amount $50,000.

Hilda Stich Stroock Fellowship Fund.

Established 1927 for **general** scientific study. Amount $25,000. Annual income $1,175.

Alice Goldschmidt Sachs Fellowship Fund.
Established 1933 for general scientific study. Amount $25,000. Annual income $1,175.

Sigmund M. Lehman Fellowship Fund.
Established 1932, for general scientific study. Amount $35,000. Annual income $1,650.

MOUNT SINAI HOSPITAL

1 East 100th St., New York, N. Y.

George Blumenthal, Jr., Fellowships **$1,600**
Founded by Mrs. George Blumenthal, 1908. Open to men and women with M. D. degree. Available in any American university and occasionally abroad, for study under the direction of the Mt. Sinai Hospital Director of Laboratories.

Theodor Escherich Fellowship **$600**
Founded 1913. Open to men and women with M. D. degree. Available in any American university, and occasionally abroad, for study under the direction of the Mt. Sinai Hospital Director of Laboratories.

Moses Heineman Fellowship **$600**
Founded by Moses Heineman, 1914. Open to men and women with M. D. degree. Available in any American university, and occasionally abroad, for study under the direction of the Mt. Sinai Hospital Director of Laboratories.

Isidore Hernsheim Fellowship in Chemistry **$1,500**
Donated by Mrs. Addie W. Homan, 1929. Open to men and women. Available at Mt. Sinai Hospital for research in chemistry.

Eugene Meyer, Jr., Fellowship **$600**
Founded by Eugene Meyer, Jr., 1910. Open to men and women with M. D. degree. Available in an American university, and occasionally abroad, for laboratory training under the direction of Mt. Sinai Hospital Director of Laboratories.

Dr. Joseph Brettauer Research Fellowship in Gynecology **$1,200**
Donated by "A Friend" in 1933. Open to men and women. Available in Mount Sinai Hospital in laboratory or hospital wards or both.

Physiology Fellowship **$2,000**
Established by Dr. Ralph Colp for three years, 1933. Open to men and women. Available in Mount Sinai Hospital.

NATIONAL RESEARCH COUNCIL

2101 Constitution Ave., Washington, D. C.

The National Research Council administers a series of post-doctorate research Fellowships supported on funds contributed by the Rocke-

feller Foundation. The administration of these Fellowships is in the charge of a Medical Fellowship Board appointed by the Executive Board of the Council. Fellowships are awarded to individuals who have demonstrated a high order of ability in research and who have received the Ph.D. or M.D. degree or equivalent training.

These Fellowships are available in all branches of medicine, both preventive and curative, and are open to citizens of both sexes in the United States and Canada. Candidates will be favored who express intention of following a career in one of the preclinical sciences or of approaching clinical medicine and surgery through a discipline in one of these sciences. Fellows are expected to devote their entire time to research, except that they may, with permission of the Board, incidentally attend advanced courses of study. The grants to Fellows shall be determined by the Medical Fellowship Board in each case. The normal minimum initial amount is $1,800 for unmarried and $2,300 for married Fellows. The actual allowance will depend upon the past record of the applicant in scientific work, the family obligations which he carries, and the cost of living in the location chosen for study.

Fellowships are allotted at stated meetings of the Board held in March and September, and applications to receive consideration at these meetings must be filed on or before February 1 and August 1, respectively. Fellowships may begin at any time and are granted for twelve months, with an allowance of six weeks for vacation to Fellows working within the United States. No vacation allowance is made to Fellows working abroad.

NATIONAL TUBERCULOSIS ASSOCIATION

370 Seventh Avenue, New York, N. Y.

Medical Research Fellowships (paid in 1933) ..... **about $24,000**

The National Tuberculosis Association supports research Fellows entirely, or in part, in connection with the wide program of tuberculosis research that it sponsors in about 20 to 25 universities, laboratories and sanatoria. Each institution to which a grant is made, including salaries for assistants, etc., works upon a specific tuberculosis problem and all work is closely coordinated by the Medical Research Committee.

Social Research Fellowships **$1,000**

For social studies on statistical and social aspects of tuberculosis.

Trudeau Medal.

Established 1925, to be awarded not oftener than once a year to the individual who in the judgment of the Association has made the most meritorious contribution on the cause, prevention or treatment of tuberculosis.

UNIVERSITY OF NEBRASKA COLLEGE OF MEDICINE

Omaha, Neb.

Residency.

Department of Radiology.

NELSON MORRIS MEMORIAL INSTITUTE FOR MEDICAL RESEARCH OF THE MICHAEL REESE HOSPITAL

Chicago, Ill.

Otto Baer Fund **$11,250**
Established 1920, for research in medicine. Original amount, $200,000.

Rosette Josephson Fund **$350**
Established 1925, for general support of research in the Institute. Present amount, $6,000 (ultimately to be $25,000).

Laboratory Research Fund **$5,000**
Established in 1910 for laboratory research purposes. $5,000 is annually available from this fund, and $30,000 in addition from the directors. Not all of this is used for research, but must support the routine work of the hospital of which the Institute is part.

Isaac and Kate Meyer Fund **$1,000**
Established 1925, for the general support of research in the Institute. Present amount, $18,000 (ultimately to be $50,000).

Philip and Emma Stein Fund **$1,500**
Established 1925, for research in **bacteriology and immunology.** Original amount, $25,000.

Albert Kuppenheimer Fund **$3,000**
Established 1923, for research in **bacteriology and immunology.** Original amount, $50,000.

Leon Klein Fund **$3,000**
Established 1926, for research in **pathology.** Original amount, $50,000.

J. G. Syndacker Fund **$1,800**
Established 1923, for research in **pathology.** Original amount, $30,000.

John D. and Fannie K. Hertz Fund **$1,800**
Established 1923, for research in **chemistry.** Original amount, $30,000.

Gusta Morris Rothschild Fund **$3,000**
Established 1923, for research in **chemistry.** Original amount, $50,000.

NEW ENGLAND SOCIETY OF PSYCHIATRY

H. L. Paine, Secretary

Grafton State Hospital, Box Z, North Grafton, Mass.

New England Society of Psychiatry Prize Thesis **$150**
Established 1927, to stimulate research in **psychiatry.** Award to be made on basis of originality and quality of paper.

NEW YORK ACADEMY OF MEDICINE

2 East 103rd St., New York, N. Y.

Edward N. Gibbs Memorial Prize.

Established 1901 by Sarah B. Gibbs and George Gibbs Sherrill, to promote research in diseases of the kidney. Original amount, $10,000. Present amount, $21,482. Annually available, $750.

Gold Medal.

Established 1928 by Samuel McCullagh, M. D., to be awarded at infrequent intervals for unusually distinguished service in medicine. Original amount, $3,000.

Thomas W. Salmon Memorial Award for Psychiatric Research.

Established 1931 as a memorial to Dr. T. W. Salmon by friends and co-workers, to be used for the dissemination of knowledge in the control and prevention of mental and nervous disease, assistance in the presentation of new and important communications in the field of psychiatry and mental hygiene, and the assistance and initiation of research. As part of its program, the Committee has set aside a sum which will be available for small grants to physicians and others who are engaged in research in the field of psychiatry and mental hygiene. Applicants preferably should be associated with a university, hospital, or established association or organization of good standing and should be endorsed by an officer of such an institution. Should the above conditions not obtain in a project of special merit, the applicant should make himself known to a member of the committee or to a psychiatrist prominent in the profession and obtain the endorsement of his work from such a person. Limited to modest grants. Applications are considered and acted upon April 20th and October 20th each year. They should be sent to the Thomas W. Salmon Memorial Committee, New York Academy of Medicine.

NEW YORK UNIVERSITY, UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE

New York, N. Y.

Christian A. Herter Research Scholarship ..... **flexible**

Awarded each year to a graduate or an undergraduate who has already demonstrated aptitude for physiological and chemical research and who plans investigations in chemical pathology, physiological chemistry or pharmacology.

SOFIE A. NORDHOFF-JUNG CANCER RESEARCH FUND

American Security & Trust Co., Washington, D. C.

Sofie A. Nordhoff-Jung Cancer Research Fund ..... **biennially $1,000**

Established 1923, by Dr. Sofie A. Nordhoff-Jung, for the encouragement of cancer research. The scope of the fund is international. It is awarded by a committee of four European scientists for outstanding achievements in cancer research.

NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

303 East Chicago Avenue, Chicago, Ill.

Elizabeth J. Ward Scholarships ..... **total of $25,000**

These scholarships, totaling together $25,000 a year, are awarded to graduate or undergraduate students, in either the clinical or the preclinical departments.

James A. Patten Research Fellowships ..... **each $500**

Four Fellowships to students who wish to devote time to research in some branch of medical science.

Medical School Alumni Fund **$132.86**

Established 1904, for medical research. Present amount $2,657.16.

Rea Bequest **$485**

Established 1902, for medical research. Original amount, $9,700.

Postgraduate Fellowships.

Beginning 1926-1927, a limited number of salaried Fellowships in medicine are available to graduates who have completed their internships. Opportunity for training in internal medicine and for clinical investigation will be provided.

James A. Patten Fund **$14,000**

Established 1911, for medical research in bacteriology and tuberculosis. Present amount, $258,183.54.

OBERLAENDER TRUST OF THE CARL SCHURZ MEMORIAL FOUNDATION

225 South 15th Street, Philadelphia, Pa.

Fellowships for Study in German Speaking Countries.

The Oberlaender Trust was established for the promotion of mutual understanding in cultural matters between the United States and German speaking countries. It provides means for qualified American citizens of mature age, actively engaged in public service, to acquaint themselves with those developments in German speaking countries that are of significance to their work.

Grants are made upon invitation, to men and women who are in a position to use their findings for the greatest benefit of the American public. The field of public health receives considerable attention, as well as related fields of science such as chemistry, sanitary engineering, recreation, etc., but the Trust does not allot fellowships specifically for medical research work, as it is felt that other foundations meet this need to a great extent. Special consideration is given to those who are directly reaching the public and whose projects are of more general interest.

The amount of the stipend and the length of tenure are adjusted to each case.

PATHOLOGICAL SOCIETY OF PHILADELPHIA

Herbert L. Ratcliffe, Secretary
University of Pennsylvania, Philadelphia, Pa.

The William Wood Gerhard Gold Medal.
For medical research. Capital about $4,000.

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE

Philadelphia, Pa.

Robert M. Girvin Fellowship in Research Medicine **$761.26**
Purpose similar to Porter Fellowship and appointment made in same way.

Robert Robinson Porter Fellowship in Research Medicine **$690.00**
Offers an opportunity to individuals who desire to devote a year or more to investigation in the Medical Sciences. Appointment dates from July 1st of each year and the award is made by the Professor of Research Medicine, subject to approval by the Board of Trustees.

Carnegie Corporation of New York Endowment Fund for Medical Research **$8,619.74**
Established 1927, by Carnegie Corporation of New York, for medical research in the Medical School of the University. Principal, $251,610.79.

John Herr Musser Department of Research Medicine Fund **$10,773.01**
Established 1909, by Mrs. Harriet C. Prevost, for the support of the Department of Research Medicine which was established by this endowment. Capital, $212,434.54.

Louis A. Godey and Marion Godey Seeger Fellowship in Clinical Medicine.
To support a Fellowship in clinical medicine.

Henrietta Hecksher Fellowship in Medical Research **$600**
Offers an opportunity to individuals who desire to devote at least one-half of their time to medical research under the direction or supervision of the Professor of Medicine for a period of at least one year. Award is made by Professor of Medicine, subject to approval by the Board of Trustees.

William Pepper Laboratory of Clinical Medicine Endowment Fund **$5,017.40**
Established 1925, by the executors of the estate of Dr. William Pepper, for the endowment of the Laboratory. Capital, $123,617.63.

Martin Maloney Memorial Clinic.
Established 1927, by sundry persons and erected at a cost of $1,000,000. The Clinic is for the purpose of research in clinical medicine and the operation of various sub-clinics.

Edward W. Bok Fellowship in Clinical Medicine **$510**

By Edward W. Bok, in 1927, for research in clinical medicine. Present amount, $10,000.

Samuel Dickson Fellowship in Bacteriology **$900**

The holder shall do full-time work in the Bacteriology Laboratory and shall publish only from it, under the Laboratory imprint. The award is made by the Board of Managers of the Hospital of the University of Pennsylvania, upon nomination of the Director of the Wm. Pepper Laboratory of Clinical Medicine.

Gynecologic Research **$4,600**

Two Fellowships are offered in this subject under the auspices of the Gynecean Hospital Institute of Gynecological Research.

Eldridge R. Johnson Foundation for Research in Medical Physics.

Established 1927, by Eldridge R. Johnson. Original amount $800,000, subsequently increased to $1,000,000. Of this sum $200,000 was allocated towards the construction of the Martin Maloney Clinic and $800,000 is held inviolate as endowment of the Foundation.

Louis J. Kolb Fund for Study and Treatment of Cancer.

Established in 1928 by Col. Louis J. Kolb for the study and treatment of cancer. Total gifts to the Fund aggregate $117,713.70. The funds concerned have been used for the stated purposes, the major expenditure having been for 1,245.362 milligrams of radium now in use for the stated purposes.

Woodward Fellowship in Physiological Chemistry **$900**

Filled by election by Board of Managers of the Hospital of the University of Pennsylvania and the Board of Trustees, upon nomination by the Director of the William Pepper Laboratory of Clinical Medicine. Incumbent shall give his full time to work in physiological chemistry at the Laboratory and publish only from it, under the Laboratory imprint.

George B. Wood Fellowship in Hygiene **$700**

To train teachers of Public Hygiene. The holder is expected to devote a year to assisting in classroom instruction and in giving demonstrations illustrating special lines of investigation that he may be carrying on during the year. Appointment is made under the same conditions as those applying to the Thomas A. Scott Fellowship.

Thomas A. Scott Fellowship in Hygiene **$1,000**

To aid talented students who desire to become investigators or teachers in the field of sanitary science. Appointment is made by the Director of the Laboratory of Hygiene subject to the approval of the Provost and the Board of Trustees.

F. M. Kirby Fellowship **$1,000**

Offers a graduate in medicine an opportunity to do research in the domain of surgery, with special reference to physiology, and to devote a portion of his time to teaching if opportunity arises.

Hunter Fellowship in Surgery **$850**

Agnew Fellowship in Surgery **$1,800**

J. William White Professorship of Surgical Research **$7,000**

Established 1926, by bequest of Dr. White, for the establishment of a professorship in surgical research. Capital, $141,876.25.

Bishop Paul Matthews Fellowship in Urology **$1,200**

Cancer Research Fund of the Graduate School of Medicine.

Furnished on request.

Henry Phipps Institute Endowment Fund ..... **approximately $40,000**

Established 1920, by Mr. and Mrs. Henry Phipps, and further augmented 1927 by a consolidation of other funds and by additional gifts and pledges. For the study, treatment and prevention of tuberculosis. Through the consolidation of other funds and the gift of $500,000 from Mr. and Mrs. Phipps, together with the gifts and pledges of others, this fund will have eventually a capital of $1,000,000, and is already receiving the income on that sum.

Louis A. Duhring Cutaneous Medicine Department Endowment Fund.

Established 1915, by Dr. Louis A. Duhring, by bequest in his will, for the purchase of wax or paraffin or other kinds of models of cutaneous diseases, and for general requirements of the department. Present amount, $350,600.57. Annually available, approximately, $15,000.

Edward B. Robinette Foundation for the Advancement of Medical Science and the Promotion of the Liberal Arts.

Founded in 1928, by Edward B. Robinette, with an initial contribution of $250,000, to conduct a clinic for the study, treatment and prevention of diseases of the heart and the circulatory system, the capital to be increased by further gifts from the donor. Present amount, $320,645.72.

Charles Harrison Frazier Foundation for Neurological Surgery **$3,221.81**

Established 1929, by Mrs. John E. Zimmerman, for the development and progress of neurosurgical problems and the welfare and comfort of neurosurgical patients. Principal, $52,885.50.

William Gibson Fund **$555.86**

Established 1926, by Alfred C. Harrison, for research in surgery and the direction of the John Rhea Barton Professor of Surgery. Principal, $10,012.50.

Barton Cooke Hirst Foundation for Research in Obstetrics.....$428.72
Established 1929, by sundry gifts, for research activities in the Department of Obstetrics. Principal, $7,851.99.

Fred M. Kirby Medical Research Fund.....$7,378.16
Established 1928, by Fred M. Kirby, for the study and prevention of nervous and mental diseases. Principal, $125,000.

Daniel J. McCarthy Research Fund.....$4,016.05
Established 1929, by Dr. Daniel J. McCarthy, for research in the general field of nervous and mental diseases. Principal, $77,084.46.

Hill S. Warwick Fund.....$6,811.30
Established 1927, by Miss Agnes Warwick and augmented by bequests of Dr. Hill S. Warwick and Miss Agnes Warwick, for the erection of a dormitory, the net income from which is to be devoted to the investigation of diseases of an infectious or contagious nature, with a view to finding a means for their prevention. Principal, $184,925.44.

Philip Syng Physick Surgical Foundation.....$275.31
Established by sundry gifts for the advancement of surgical research. Principal, $5,393.87.

Robert J. C. Walker Fund.....$3,398.14
Established 1905, by Mrs. Anne W. Penfield for research scholarships in bacteriology, immunology, chemotherapy, pathology and biochemistry in the laboratories of the Graduate School of Medicine and affiliated institutions. Principal, $67,405.78.

The J. Allison Scott Fellowship.....$682
Established 1919, by sundry gifts for a fellowship in research medicine. Principal, $13,442.36.

The A. Atwater Kent Fellowship in Clinical Medicine.....$1,250
Established 1927, by A. Atwater Kent, for the support of a fellowship in clinical medicine. Principal, $25,996.77.

John G. Clark Memorial Fund.....$3,721.30
Established December 18, 1931, by sundry gifts, the income from which is used for special purposes relating to the study and care of patients of the Gynecological Division of the Hospital of the University of Pennsylvania, for the support of research or clinical assistants and for other similar purposes designed to improve the Gynecological Division. Principal, $69,559.41.

Dr. John G. Clark Fund.....$6,831.87
Established August 13, 1931, by bequest under the will of Mrs. Elizabeth B. Ketterlinus of $150,000 held in trust, the income therefrom being for the up-building of the scientific work of the Gynecological Division of the University Hospital.

Cancer Research Fund of the Graduate School of Medicine.

Established in 1927, and continued since then by various gifts, totaling to January 1, 1934, $404,728.68. The gifts were not in the nature of endowments but in the nature of funds, of which the principal is being expended at the discretion of the committee in charge.

PHILADELPHIA ACADEMY OF SURGERY

19 South Twenty-second St., Philadelphia

Samuel D. Gross Prize in Surgery **$1,500**

Awarded every five years for the best original essay on a subject in surgical pathology or surgical practice, founded on original investigations. Candidates must be American citizens. Award will not be made if none of the essays is considered worthy. Details may be obtained by addressing the Trustees of the Samuel D. Gross Prize at the above address. Essays in competition for the next award will be received until Jan. 1, 1935.

PHILADELPHIA INSTITUTE FOR MEDICAL RESEARCH

Leonard G. Rowntree, M.D., Director
Philadelphia, Pa.

Will accept Fellows in Medicine assigned here for work in research medicine.

ELLA SACHS PLOTZ FOUNDATION

Dr. Joseph C. Aub, Secretary
695 Huntington Avenue, Boston, Mass.

Established in 1923 for the advancement of scientific research. For the present, researches will be favored that are directed toward the solution of problems in medicine and surgery or in branches of science bearing on medicine and surgery. As a rule, preference will be given to researches on a single problem or on closely allied problems. The Fund is not restricted to any country. Grants may be used for the purchase of apparatus and supplies that are needed for special investigations, and for the payment of unusual expenses incident to such investigations, including technical assistance, but not for providing apparatus or materials which are ordinarily a part of laboratory equipment. Stipends for the support of investigators will be granted only under exceptional circumstances. There are no application blanks but requests should include statements as to the character of the proposed research, the amount of money requested, and the objects for which it would be used. A letter from the head of the laboratory is desirable. Applications must be in the hands of the secretary before May 1.

QUEEN'S UNIVERSITY FACULTY OF MEDICINE
Kingston, Canada

George Christian Hoffman Fellowships

Alpha, for Pathological Research.....**$800**

The award is determined by the undergraduate record of the candidate and upon evidence of capacity for original research. It is given to a recent graduate nominated by the faculty and approved by the Senate of the University. The holder should proceed to some institution or university in Europe or the United States of America, approved by the Senate of the University, where post-graduate study and research may most advantageously be pursued. The Fellowship is tenable for a second or even a third year, on recommendation of the faculty.

George Christian Hoffman Fellowships

Beta, for extended studies in Surgery.....**$600**

The award is determined by the undergraduate record of the candidates and on evidence of capacity for original research, and is given to a recent graduate nominated by the Faculty and approved by the Senate of the University. The holder should proceed to some institute or university in Europe or United States of America, approved by the Senate of the University, where post-graduate study and research may most advantageously he pursued. The award is tenable for a second or even a third year, upon recommendation of the faculty.

Richardson Fellow in Pathology.....**per month $50**

Appointment open to graduates, preference being given to those who have previously served as interns or taken special training in pathology. The salary is $50 per month, with rooms and board in hospital. The appointment may be held for one or more years at the discretion of the committee. Appointee will have the status of senior intern in hospital and his duties will be under control of a committee consisting of the Professors of Medicine, Surgery and Pathology.

RADIOLOGICAL SOCIETY OF NORTH AMERICA
Donald S. Childs, M.D., Secretary
607 Medical Arts Building, Syracuse, N. Y.

Memorial Fund.

Established 1927, to promote research pertaining to X-ray diagnosis, and X-ray, radium and other forms of radio-therapy.

Medals are given for exceptional work.

THE ROCKEFELLER FOUNDATION

49 West 49th Street, New York, N. Y.

The Rockefeller Foundation grants fellowships in fields of the humanities, the social, natural, and medical sciences, and in public health. The fellowships in the medical sciences cover a variety of fields, including anatomy, histology, embryology, physiology, biochemistry, pharmacology, pathology and comparative pathology, bacteriology, immunology, parasitology, and the application of these to clinical subjects. Fellowships in public health are granted for the definite needs of public health services in the United States and other countries.

The Foundation also makes grants for the support of fellowships in medicine, under certain limitations, for citizens of the United States and Canada, to the National Research Council, and for British nationals, to the Medical Research Council of Great Britain.

Applications for fellowships in medicine should be presented by the candidate's professor or by the dean of the medical faculty, or by the director of the institution concerned. Applications from residents of the United States and Canada should be sent to the Medical Fellowship Board, National Research Council, 2101 Constitution Avenue, Washington, D. C. Correspondence from residents of European countries other than Great Britain should be addressed to The Rockefeller Foundation, Medical Sciences, 20, rue de La Baume, Paris-8e, France. Applications from residents of Great Britain should be sent to the Medical Research Council, 38 Old Queen Street, Westminster, London. Correspondence from countries other than those mentioned above should be addressed to The Rockefeller Foundation, 49 West 49th Street, New York, N. Y.

In the field of public health the Foundation's fellowships are granted by its International Health Division, The Rockefeller Foundation, 49 West 49th Street, New York, N. Y. As a general rule, the selection of candidates is made by the official representative of the International Health Division in the candidate's locality. Applications may, however, be made through official health authorities. Such applications, with supporting papers, are forwarded to the local representative of the International Health Division whose approval is necessary.

During 1932 the total number of persons holding Rockefeller Foundation fellowships in the medical sciences was 358, and in public health 225, total 583. The number administered directly by the Foundation in the medical sciences was 145, and in public health 225. The normal duration of a fellowship is for one year. The basic stipend for research fellowships is $150 a month; stipend for fellowships for training, $120 a month.

JULIUS ROSENWALD FUND

Michael M. Davis, Director for Medical Services
4901 Ellis Avenue, Chicago, Ill.

Occasional grants are made to Negro physicians in varying amounts for study in various post-graduate fields.

WILLIAM SEIBERT MEMORIAL PRIZE OF THE HARRISBURG (PA.) ACADEMY OF MEDICINE

Prize $500

Given every two years to a member of the Academy who has done notable work.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

A. J. Goldfarb, Secretary, College of the City of New York
New York, N. Y.

Meltzer Endowment Fund.

To promote experimental research and publication. Capital, $14,000.

SOCIETY OF THE SIGMA XI

Professor Edward Ellery, Secretary, Union College, Schenectady, N. Y.

Sigma Xi Fellowships.

From five to ten. Founded by alumni members and associates of Sigma Xi, 1921. Open to men and women whose work and competency are determined by prominent investigators in the particular field. Available to any American university or abroad for research. Stipend, $100 to $1,000 a year. Applications should be filed before May 1 with the Secretary.

E. R. SQUIBB & SONS

745 Fifth Avenue, New York, N. Y.

From time to time fellowships are established in various universities. As a rule, they continue for a period not to exceed one year. They may or may not be renewed. The problem investigated may change from year to year even though the fellowship remains in the same institution.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

San Francisco, Calif.

University Graduate Scholarships.

In 1919 the Trustees of the University established for graduate students thirty Stanford scholarships, each paying $200 per year of three quarters, awarded for a term of one year, and allowing for the scholar's reappointment at the expiration of this time. In 1927, the Trustees established six University Graduate Scholarships of the value of $100 per quarter for four quarters. Holders of these scholarships are required to pay tuition and community fees, the graduation (diploma) fee, laboratory expenses, and all similar charges laid upon other graduate students. Applications should be filed with the Secretary, Committee on Scholarship, Stanford University, by April 15.

Somers Memorial Medical Research Fund.....annually $5,000

Established 1928, for medical research.

Bacteriological Research Fund.....$3,300

Established 1921, for miscellaneous research work within the department.

T. W. Stanford Endowment.....annually $30,000

Established 1913, for psychology and psychic investigation. Original amount, $513,901.82.

T. W. Stanford Fund.....annually $2,500

Established 1911, for psychic investigation. Original amount, $50,000.

Physical Therapy Fellowship.....six months $300

Physical Therapy Fellowship.

This gift, established by an anonymous donor in 1923, and to be known as the Rehabilitation Fund of the Medical School, provides a fellowship for six months. The amount available is $300.

Sex Research Fund.

Established 1927, by National Research Council. One project for investigation of sex differences in non-intellectual aspects of mental traits; present amount, $7,500. One project for study in physiology of sex; present amount, $750.

Fluid Research Fund in the Medical Sciences.

Established 1931, by the Rockefeller Foundation, for research in the medical sciences; $95,000; grant over six-year period to establish a fund which, together with University funds, will amount to $25,000 a year.

Flora Sharon Bequest.
Established 1931, by the will of Florence Emily Fermor-Hesketh, an endowment of $200,000 for the welfare of children through the Hospital.

Emilie Glikbarg Memorial Fund.
Established in 1931 as an endowment, the income to be used for research in medical sciences. Available annually, approximately $100.

Buckel Fellowship **$500**
Established in 1914, a research fellowship for the study of backward and feeble-minded children. The annual income from the Buckel estate is supplemented by a sum appropriated by the Trustees of the University, making the total amount available for the fellowship $500. Application should be made to the Executive Head of the Department of Psychology.

Food Research Fellowships.
Awarded from time to time to students of special promise for the purpose fo promoting research on food problems. Applications should be filed with Executive Secretary, Food Research Institute, Stanford University, Calif.

Herzstein Lecture Fund for Advance of Medical Science.
Estate of Dr. Morris Herzstein: Bequest of $20,000, given jointly to Stanford University and the University of California, for medical lectures.

Lane Medical Lecture Fund.
Dr. Levi Cooper Lane: $20,000 for the Lane Medical Lectures, to be given biennially on medical subjects. Available annually, approximately $800.

Donald Porter Jacobs Research Fellowship.
In 1928 a gift of $5,000 was made by Mr. and Mrs. Albert P. Jacobs to establish a research fellowship fund in memory of their son, Donald Porter Jacobs. The income of this fund is to be awarded annually to a worthy graduate student in whatever field of study may seem most desirable at the time. The annual amount available is approximately $200. Application should be made to the Committee on Graduate Study.

TEMPLE UNIVERSITY SCHOOL OF MEDICINE

Broad Street at Ontario, Philadelphia, Pa.

The following fellowships are available for graduates in medicine: **Pathology**, one year, salary, $40 a month and maintenance. **Radiology**, one year, salary, $50 a month and maintenance. **Medicine**, one year, salary $35 a month and maintenance. **Ophthalmology**, one year, salary $50 a month and maintenance.
Application should be made to Dr. William N. Parkinson, Dean.

ELIZABETH THOMPSON SCIENCE FUND

Dr. A. C. Redfield, Secretary
Harvard University, Cambridge, Mass.

Established 1885, by Mrs. Thompson, Stamford, Conn., for the advancement and prosecution of scientific research in its broadest sense. Original amount, $25,000; present amount, $25,000. Available annually $1,000

UNIVERSITY OF TORONTO FACULTY OF MEDICINE

Toronto, Canada

George Brown Memorial Scholarship in Medical Science ..... triennially $1,500

Awarded every three years of convocation for conferring degrees in Medicine, to the Bachelor of Medicine of not more than three years' standing who has taken a high place in the professional examinations of the last four years of the course in addition, in biology of the first year, and who is judged by a committee composed of the heads of various departments under which the examinations are given, to be most capable of carrying out research. Holder during the year of tenure is required to devote not less than one year to original research, either laboratory or clinical, in a department of the University of Toronto or of any other Medical School or Hospital approved by aforementioned committee. Paid in three portions, one-third at time of award, one-third six months later, and balance upon satisfactory completion of the work.

David Dunlap Memorial Scholarships ..... each $250

May be competed for by any student in Arts or in Medicine at the conclusion of his final year in either Faculty, or by graduates of not more than three years' standing from either of these Faculties.

Charles Mickle Fellowship.

Annual income from an endowment of $25,000. Awarded annually to that member of the medical profession who is considered by the Council of the Faculty of Medicine of the University of Toronto to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science.

Banting and Best Chair of Medical Research.

The terms of the Act establishing the Banting and Best Research Fund provide for an annual grant to the University for the promotion of Medical Research. Research under the provisions of this chair began in July, 1923, and researches on several medical problems are being carried on in laboratories in the Banting Institute.

Alexander McPhedran Research Fellowship in Clinical Medicine.....$1,200

Promotion of Clinical and Laboratory Work in Department of Medicine. Open to graduates in Medicine of the University of Toronto and of such other Universities and Medical Schools as may be approved of by the Faculty of Medicine. It is tenable for one year but the holder of it is eligible for reappointment. It is awarded on the recommendation of the Professor of Medicine to the President, and the holder of it is obliged during its tenure to devote his whole time to investigations in clinical medicine under the direction of the Professor of Medicine.

James H. Richardson Research Fellowship in Anatomy.....$500

Open to graduates in medicine of the University of Toronto and of such other Universities and Medical Schools as may be approved by the Nominating Committee and to students in the University of Toronto who shall have completed the third year of the course in Medicine.

Awarded on nomination of a Committee consisting of the Professor of Anatomy, the Professor of Biology and the Professor of Surgery in the University of Toronto. The holder is obliged during its tenure to devote his entire time to investigation in anatomy under the direction of the Professor of Anatomy in the University of Toronto. Tenable for one year, but the holder is eligible for reappointment for not more than two additional years at the discretion of the University Senate upon the recommendation of the Nominating Committee.

J. J. Mackenzie Fellowship in Pathology.....Interest on $5,000

Open to graduates in medicine of the University of Toronto and awarded on the recommendation of the Professor of Pathology. The holder shall devote his full time to research in the Department of Pathology. The fellowship is tenable for one year, but the holder is eligible for re-appointment.

George Armstrong Peters Prize.....$100

in cash and approximately $100 in sterling silver, suitably engraved. Awarded biennially to a graduate of the University of Toronto of not more than ten years' standing, who in the opinion of the Committee on Fellowships and Scholarships, has made a sufficiently important contribution to surgical science. It will be presented by the President or the Dean at the December meeting of the Faculty.

Reeve Prize $50

Awarded annually on the basis of a published report of the best scientific research accomplished by a research fellow or junior member of the staff in any department of the Faculty of Medicine who has not held an appointment on the staff for more than five years. A report of the work must have been published prior to September 30 of the year of award.

Lister Prize in Surgery.....**Interest on $5,000**

Awarded annually to the candidate for the degree of Master of Surgery (M.S.) who has obtained the highest standing in the exami-

Canadian Medical Institute Prize.....**$25**

Awarded annually to that student in the final year writing the best essay on "Advantages to be derived from an Annual **Periodic Health Examination.**" The award will be made on the recommendation of the Professor of Hygiene and Preventive Medicine and the Professor of Medicine.

EDWARD L. TRUDEAU FOUNDATION FOR RESEARCH AND TEACHING IN TUBERCULOSIS

Edward R. Baldwin, Director
Saranac Lake, N. Y.

Research Fellowships.

Fellowships are offered to young physicians and others, to give them the opportunity for research work while undergoing treatment for the disease, or to those in good health as well. Fellows who are also patients must be well enough to do one half day's work safely, resting for the remainder of the time.

The stipend covers the necessary expenses for the work, plus board and room for one year, including one month's vacation, or six weeks if necessary for health. Awards depend on the applicant's fitness for the vacancy that exists at the time.

TUFTS COLLEGE MEDICAL SCHOOL

Boston, Mass.

Research Fellowships.....**per month $100**

A number of Research Fellowships exist in various departments. They combine teaching and research.

UNIVERSITY OF VERMONT COLLEGE OF MEDICINE

Burlington, Vt.

Fellowships in Clinical Medicine.....**$700**

These are teaching Fellowships, two are awarded each year, and they are good for two years. The holders are exempt from paying tuition fees, and the stipend is increased to $800 the second year.

UNIVERSITY OF WASHINGTON

Seattle, Wash.

Bailey and Babette Gatzert Foundations for Child Welfare.

Established 1910, for the purpose of conducting a laboratory for the mental and physical examination of children to determine their individual defects and aptitudes and, in accordance with the results of

the examinations to suggest the best means of education and treatment; to assist in establishing the child welfare agencies and child study laboratories throughout the State, and to carry on research in child phychology. Original amount, $30,000.

Alice McDermott Memorial Fund.

Fund of $100,000 for research work in or in connection with the said university to promote the prevention or cure of tuberculosis; second, the purchase of radium and research work in connection with and actual use of same in the treatment of disease.

VIOLET HART FUND

The Tulane University of Louisiana, New Orleans, La.

Rudolph Matas Award.

The fund for this award was provided by Mr. Mike S. Hart. It established the Violet Hart Fund which is administered by Tulane University. It provides an award in the form of a medal to be made to the North American surgeon who has done outstanding work in vascular surgery, as the occasion arises, as determined by a committee of surgeons selected for life by the Hart family with the addition of the incumbent of the chair of surgery in the Tulane University of Louisiana School of Medicine.

The committee is composed of Dr. Emile Bloch, chairman; Dr. Lucien Landry and Dr. Isidore Cohn, with Dr. Alton Ochsner.

WESTERN RESERVE UNIVERSITY SCHOOL OF MEDICINE

Cleveland, Ohio

Crile Fellowship in Surgery.....$2,500

For full-time research.

WILLIAM HOLLAND WILMER FOUNDATION

Henry Breckinridge, Secretary
39 Broadway, New York, N. Y.

Research Fund.

The object of this foundation is partly to support research in the field of medical science as it relates to the eye.

YALE UNIVERSITY GRADUATE SCHOOL

New Haven, Connecticut

Research Fellowship in Bacteriology.....$1,200

Awarded on recommendation of Professor Rettger for special research in bacteriology in the Graduate School. Applicants must have completed the work for the Ph.D. degree.

Alexander Brown Coxe Memorial Fellowships in the Biological Sciences.

Established in 1927 by a gift of $100,000. The income is awarded annually to one or more investigators of promise in the comprehensive field of biological sciences. The stipends vary, amounting in some cases to $2,500, with the possibility of additional grants to aid in the investigations undertaken. Preference is given to graduates of universities who have already obtained the M.D. or Ph.D. degree and who have demonstrated their fitness to carry on successfully original research of a high order. Recipients of these fellowships are required to submit reports on their work, either at stated intervals or at the end of the academic year; and when the results of their work are published they are expected to give proper credit to the Alexander Brown Coxe Fellowship.

Seessel Fellowships in the Biological Sciences (2).....each $1,500

Established in 1913, for the promotion of original research in biological studies. These fellowships are awarded (one in alternate years) on the recommendation of the Board of Permanent Officers of the Graduate School, upon the advice of a standing committee composed of the chairmen of the departments of Physiology, Physiological Chemistry, Zoology, and Botany, in consultation with the Dean of the Graduate School. Preference is given to graduates of universities who have already obtained the doctorate and who have demonstrated by previous work their fitness to carry on successfully original research work of a high order in some of the departments of biological studies.

Fleischmann Fellowship in Organic Chemistry.

A gift of $800 from the Fleischmann Laboratories, operated by Standard Brands, Inc. For a candidate for the Ph.D. degree in Organic Chemistry.

Eli Lilly Company Research Fellowship in Organic Chemistry.....$3,000

A gift of $5,000 a year by the Eli Lilly Company of Indianapolis, Ind., on behalf of the Lilly Research Laboratories. The fellowship of $3,000 is awarded only to graduates of universities who have already received the doctorate and who have demonstrated exceptional ability in carrying on successfully original research in organic chemistry. The residue is provided to pay expenses involved in the investigations undertaken. This fellowship calls for ten months of actual service.

Eli Lilly Company Graduate Fellowship in Organic Chemistry.....$800

A gift of $900. Of this fund, $800 is to be awarded to a student enrolled for the degree of Doctor of Philosophy in the department of Chemistry, the balance being available for purchase of special equipment and chemicals used in research. The student must have shown capacity for original work in some special field of organic chemistry and must have completed two years of graduate study

Metz Research Fellowship in Organic Chemistry **$2,500**

A gift from the Winthrop Chemical Company of New York City. The fellowship is awarded for research of a high order in some field of organic chemistry or biochemistry. Preference is given to graduates of universities who have already obtained the doctorate. Only a part of the fund is awarded as a fellowship, the residue being used for the purchase of materials involved in the investigation undertaken. This fellowship calls for ten months of actual service.

National Tuberculosis Association Research Fellowships in Organic Chemistry and Biochemistry (2) ..... **$1,800-$2,000**

For chemical research on the tubercle bacillus; range from $1,800 to $2,000 per year, depending on the experience and training of the applicant. A limited allowance is also provided in each fellowship to aid in defraying the cost of materials used in the investigation undertaken. These fellowships are awarded to men or women students who have already obtained the doctorate and who have demonstrated their ability to carry on research work independently. Fellowships call for ten months of actual service.

E. R. Squibb & Sons Research Fellowship in Organic Chemistry **$5,000**

A gift from E. R. Squibb & Sons for special research in biochemistry and chemical synthesis.

William A. and Ellen A. Hall Scholarship Fund ..... **about $300**

Established 1928, by gift of $6,000 from William A. Hall. Income to be used for a scholarship to a member of the graduating class of the Sheffield Scientific School for advanced work in physiological chemistry or biochemistry

YALE UNIVERSITY SCHOOL OF MEDICINE

New Haven, Conn.

Charles Linnaeus Ives Fellowship ..... **Income on $10,000**

Available to graduate physicians for work in **pathology.**

Edward Thomas Calhoun Fellowship ..... **undetermined**

For research in **pathology.** This fund has been founded with an initial gift of $1,000; other gifts are to be added to it. The Fellowship is not available at the present time.

Gertrude Knight Ridgway Memorial **$1,000**

Established 1923, for bettering conditions in **nervous and mental diseases,** especially that form resulting in epilepsy and feeble-minded conditions. Balance of income used to support work in neuro-anatomy.

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